Site # 2832

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

NYD 986866390

NEW YORK EMULSION TAR PRODUCTS **SITE No. 633031**

UTICA (C) **ONEIDA (C)**

DATE: FEBRUARY 1990

FILE COPY

COMPLETED

Prepared for :

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

50 Wolf Road, Albany, New York 12233

Thomas C. Jorling, Commissioner

DIVISION OF HAZARDOUS WASTE REMEDIATION

Michael J. O'Toole, Jr., P.E. - Director

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ENGINEERING INVESTIGATIONS AT
INACTIVE HAZARDOUS WASTE SITES
IN THE STATE OF NEW YORK

PHASE I INVESTIGATION

NEW YORK EMULSION TAR PRODUCTS

CITY OF UTICA

ONEIDA COUNTY, NEW YORK

SITE No. 633031

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50 WOLF ROAD

ALBANY, NEW YORK 12233-0001

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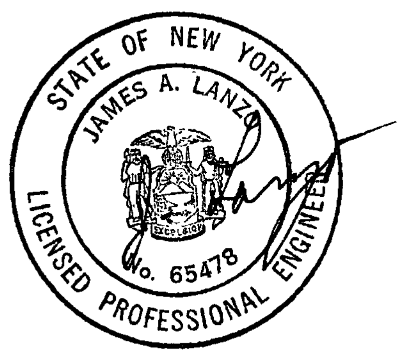


FEBRUARY 1990

TABLE OF CONTENTS

	Page No.
1.0 EXECUTIVE SUMMARY	1
2.0 PURPOSE OF PHASE I INVESTIGATION	4
3.0 SCOPE OF WORK	5
4.0 SITE ASSESSMENT	9
4.1 Site History	9
4.2 Site Surface Characterization	11
4.3 Site Hydrogeology	12
4.4 Site Contamination	13
5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM	19
5.1 Narrative Summary	19
5.2 Site Location Map	19
5.3 HRS Work Sheets	20
5.4 HRS Documentation Records	27
5.5 USEPA Site Inspection Form 2070-13	47
6.0 ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS	62
6.1 Appendix A - Data Sources and References	63
6.2 Appendix B - Revised NYSDEC Inactive Hazardous Waste Disposal Site Report	67

1.0 EXECUTIVE SUMMARY

The New York Emulsion Tar Products site is located between the Mohawk River and Utica Harbor on the north side of Utica, Oneida County, New York (Figure 1). The 2.96-acre site, presently owned by Suit-Kote Corporation, of Cortland, New York, ceased industrial operations in 1983. It was used for 57 years, first for the processing of road tars, and later for the production of asphalt emulsion. Adjacent parcels have been put to industrial uses for at least half a century (Figure 2 and Figure 3).

Investigations of the adjacent Harbor Point property by Niagara Mohawk have led to the discovery of cyanide, as well as a number of PAHs, benzene, and phenol in groundwater and soil near the site. Mohawk River sediments show signs of PAH contamination. Niagara Mohawk concluded that the New York Emulsion site appears to be one of the sources of naphthalene and benzene on the Harbor Point property, and that it may be the source of other contaminants as well.

Seven protected wetlands are found within one mile of the site. Over 100 potable water supply wells, serving an estimated 456 people, are found within a three-mile radius.

The Phase I effort involved the compilation of information gathered from several sources, including, but not limited to, the following: the New York State Department of Environmental Conservation (NYSDEC) - Region 6; the Oneida County Planning Department; and a site inspection conducted by URS Company, Inc. personnel on August 6, 1987.

The intent of the Hazard Ranking System (HRS), as developed by the Mitre Corporation under contract to the U.S. Environmental Protection Agency, is to provide a method by which uncontrolled hazardous waste sites may be systematically evaluated with regard to the potential risk that a site may pose on human health or safety, and/or the environment. The HRS is designed to provide a numerical value through an assessment of technical data and information, and relating that information with respect to the following three hazard modes:

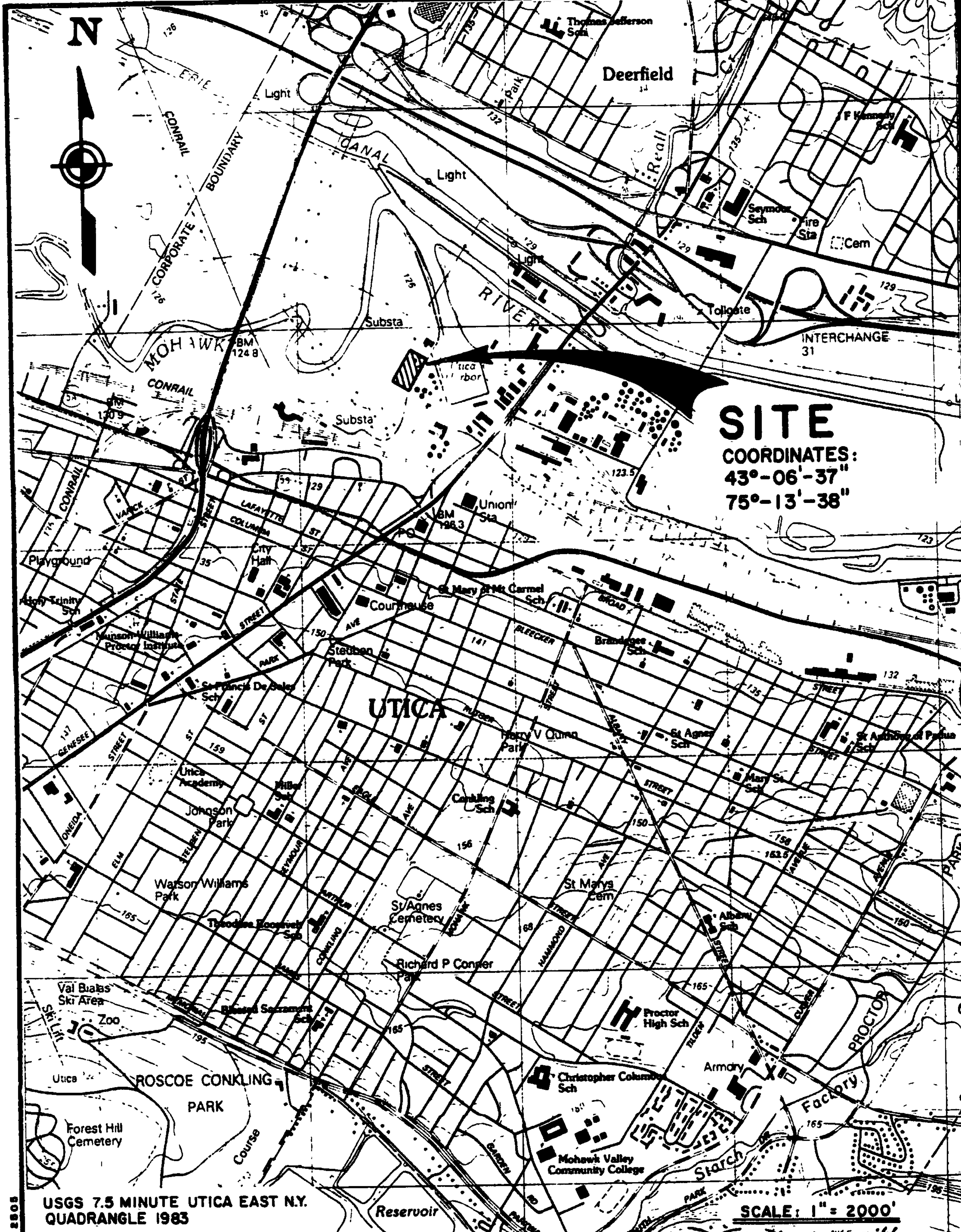
- o migration of hazardous substances from the site (S_M)
- o the potential for harm from fire and explosion (S_{FE})
- o the potential for harm from direct contact (S_{DC})

The migration potential (S_M) is determined through the rating of factors associated with three migration routes: groundwater (S_{gw}), surface water (S_{sw}) and air (S_a). The factor categories include observed release, route and waste characteristics, containment and targets. The scored value for each route is composited to determine the risk to humans and/or the environment from the migration of hazardous substances from the site (S_M). The risks involved with the potential for fire and explosion (S_{FE}) and direct contact (S_{DC}) are evaluated according to site specific information, including: waste characteristics, containment, demographics and proximity to sensitive habitats (wetlands, wildlife, etc.).

Based on information gathered during this investigation of the New York Emulsions site, the following HRS scores were obtained:

S_M = 10.74 (S_{gw} = 17.35, S_{sw} = 6.66, S_a = 0.00)
S_{FE} = 0.00
S_{DC} = 62.50

The data available in several areas for this Phase I investigation are considered inadequate for a proper site assessment; therefore, additional data gathering and evaluation is suggested. Proposed Phase II activities include investigation into the exact derivation of tars and oils found at the site, and subsurface investigations on site. Such investigations should include soil borings, installation of monitoring wells, and sampling and analysis of groundwater and surface and subsurface soil.



DWG. NO. A-2505

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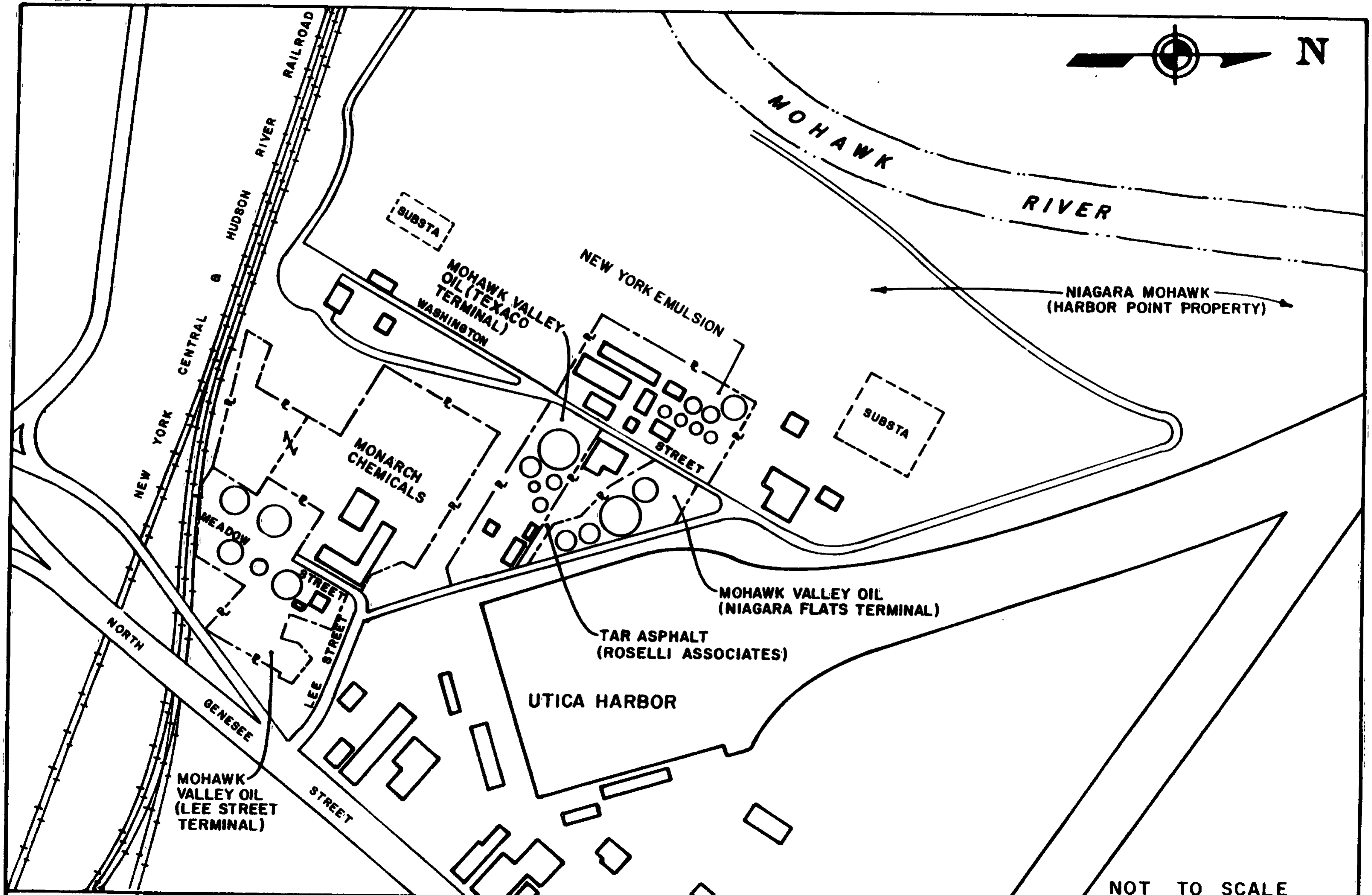
SITE LOCATION MAP
NEW YORK EMULSION TAR PRODUCTS

FIGURE 1

A-2548



URS Company, Inc.
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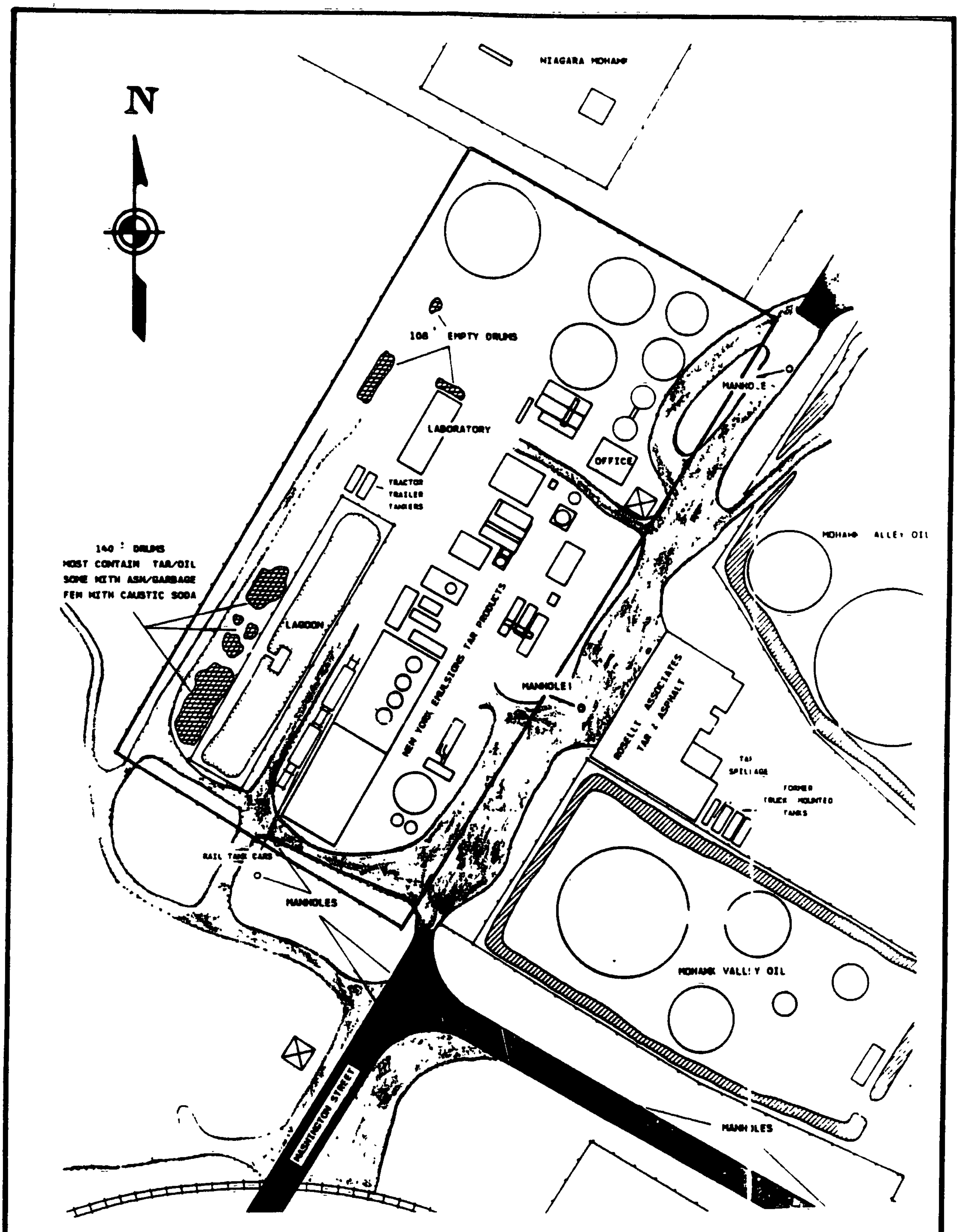
NEW YORK NEW JERSEY

NEW YORK EMULSION
SITE VICINITY PLAN

FIGURE 2



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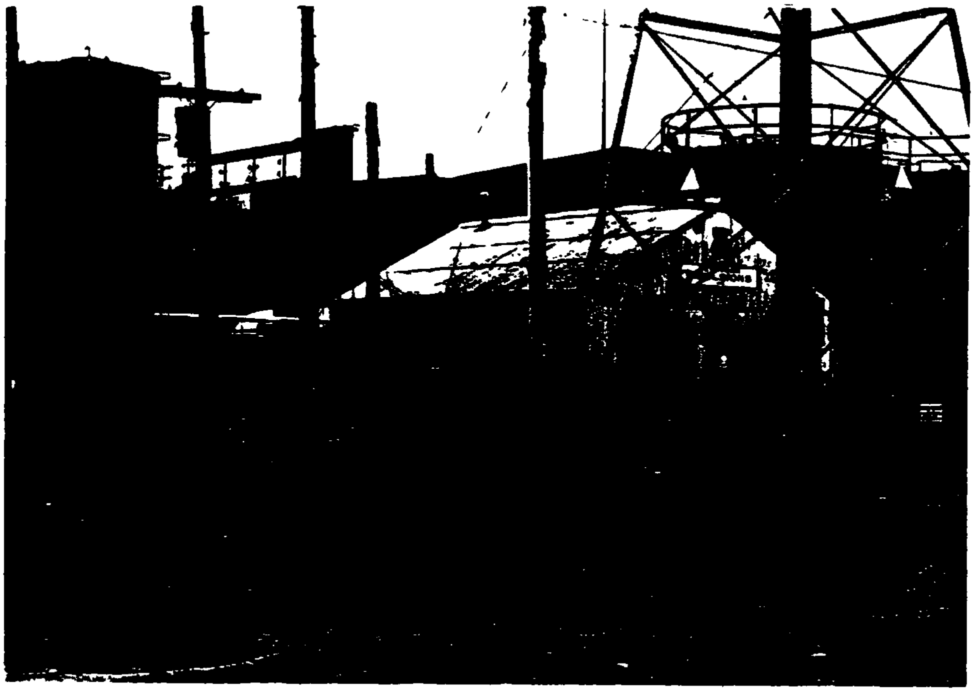
CONSULTANTS, INC.

NEW YORK EMULSION PRODUCTS SITE SKETCH

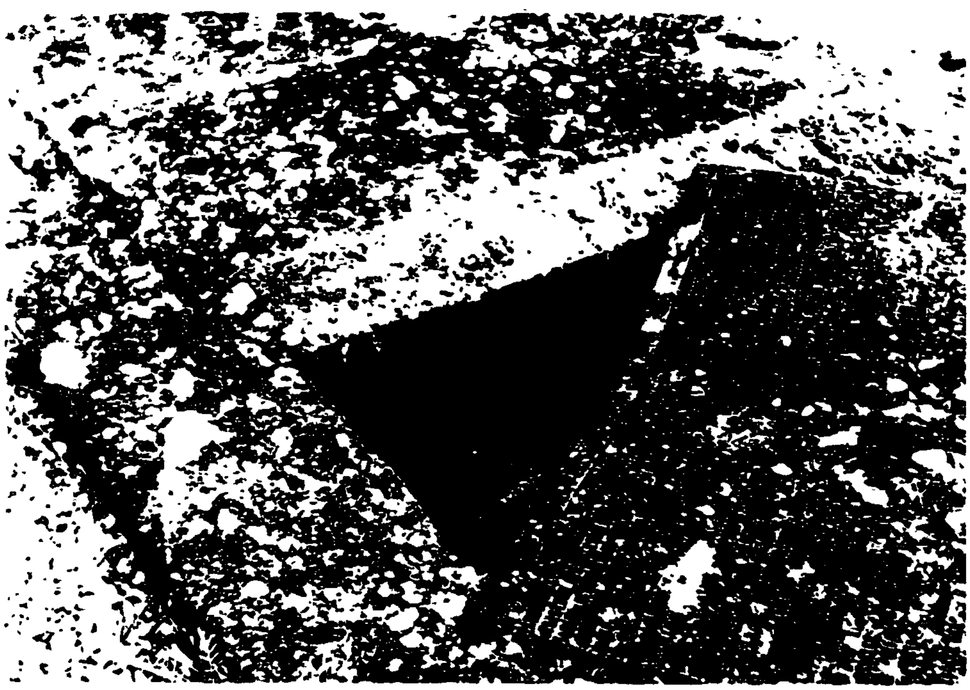
FIGURE 3

A-3108

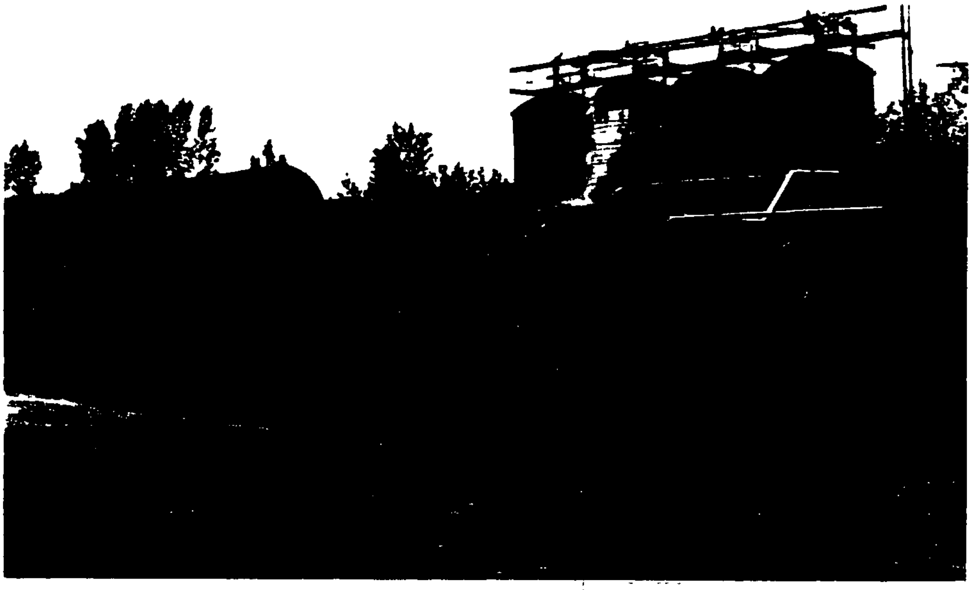
FIGURE 4 - SITE PHOTOGRAPHS



August 6, 1987 Lots of cleanup to be done here. The tanks are empty. There is some loose insulation and PCB transformers.



August 6, 1987 Lagoon discharges to manhole and storm sewer system on street. Unsure of what went into lagoon.



August 6, 1987 Hoppers used to make the material that Tar Asphalt Service would spread.

August 6, 1987 Drums on-site are mostly empty.

2.0 PURPOSE OF THE PHASE I INVESTIGATION

The Phase I investigation of the New York Emulsion Tar Products site on Washington Street was conducted for the following purposes:

- o Evaluation of the hazard and potential for harm to the public and the environment posed by the present site conditions. This includes the compilation and review of site-specific information regarding waste characteristics, routes of contaminant migration, population and/or environment at risk and operational history. All pertinent information is used to determine a Preliminary Hazard Ranking System (HRS) score for the site.

- o Evalute the adequacy of available information for the completion of a Final HRS score and identify areas where further investigation and sampling/analysis are needed to establish a valid score.

3.0 SCOPE OF WORK

The Phase I investigation at the New York Emulsion site comprised several interrelated tasks as follows:

(a) An extensive data search was conducted, using both site-specific and regional sources. This information was compiled from existing data, and new sources, and was used to develop a preliminary characterization of the site after review.

(b) A site inspection was conducted in order to characterize the site and vicinity, collected information regarding the presence and disposal practices of hazardous substances (if any), photograph the site, conduct preliminary air monitoring using a Photovac TIP instrument, and confirm information obtained during the initial data search. A USEPA Site Inspection Report (EPA Form 2070-13) and the New York State Department of Environmental Conservation Inactive Hazardous Waste Disposal Site Report were completed following the site inspection.

(c) Preliminary HRS scores were calculated for the site and the supporting documentation records were prepared using the information obtained in the data search and site inspection.

(d) The adequacy of available information was evaluated and recommendations were made for further investigations where necessary to properly develop a final HRS score.

(e) The Phase I investigation report was prepared according to the terms of the contract.

During the investigation, a number of sources were contacted for information, including but not limited to:

- o Science and Engineering Library, University of Buffalo - May 28, 1987, June 1, 1987 and June 24, 1987
    - Geological/hydrogeological information

- o Lockwood Library, Government Document Section, University of Buffalo - June 1, 1987
    - 1980 Census information (population data and source of water data)

- o Buffalo and Erie County Public Library - June 12, 1987
    - Climatalogical data and 1980 Census information

- o New York State Department of Health, Syracuse Regional Office - Ron Heerkins and Emmy Thomee - June 19, 1987 and June 25, 1987
    - General files

- o New York State Museum and Science Service - July 2, 1987
    - Geological maps

- o NYSDEC Watertown, Region 6 Headquarters - Darrell Sweredoski - July 24, 1987
    - General files

- o NYSDEC Region 6 - Gregg Townsend - August 4, 1987 and August 18, 1987
    - Site history and sampling data

- o NYSDEC - Len Ollivett, Conservation Biologist - August 6, 1987 and August 18, 1987
    - Wetlands map and endangered species information

- Oneida County Soil and Water Conservation District - Robin Mangini - August 12, 1987 and September 14, 1987
  - Irrigation and agricultural lands information

- Suit-Kote Corporation - William Fowlston, Safety Director - August 18, 1987 and September 16, 1987
  - Site history

- City of Utica - Fire Chief - September 2, 1987
  - Fire and explosion threat information

- NYSDEC Albany - Stuart Smith - September 4, 1987
  - Site history and well location

- Town of Frankfort - Kathleen Aversa, Town Clerk - September 8, 1987, September 10, 1987 and September 18, 1987
  - Source of water information

- Utica Board of Water Supply - Russell Logalbo - September 10, 1987
  - Source of water information

- Town of Marcy - Cindy Cochi and Karl Maxwell, Town Supervisor - September 10, 1987 and September 15, 1987
  - Source of water information

- Oneida County Health Department - Chris Demme - September 10, 1987
  - Source of water information

- Town of New Hartford - Robin Rueb - September 10, 1987
  - Source of water information

- o Town of Deerfield - Donald S. Youlen - September 10, 1987 and September 21, 1987
  - Source of water information

4.0 SITE ASSESSMENT

4.1 Site History

The 2.96-acre New York Emulsion site is located on the north side of the City of Utica, New York, between the Mohawk River and Utica Harbor. The site is adjacent to Niagara Mohawk's Harbor Point property in an area which has seen considerable industrial activity for many years (Ref. 8,9). The Niagara Mohawk property and two nearby properties, Mohawk Valley Oil and Monarch Chemicals, are currently on NYSDEC's registry of inactive hazardous waste sites. The adjacent Harbor Point property was the site of a water gas plant/coal gasification plant from 1902 to the 1950s and has undergone extensive investigations concerning the occurrence of hazardous wastes on site (Ref. 30). The Mohawk Valley Oil property was a fuel storage tank farm and is suspected as a source of napthalene and benzene contamination, while the Monarch Chemical Company is an active distribution and manufacturing plant of sodium hydroxide and sodium hypochlorite (Ref. 30).

Essentially every part of the area between the Mohawk River and Utica Harbor, in which the New York Emulsion site is located, has been disturbed at one time or another. Disturbances included construction of industrial facilities; storage of raw materials or byproducts; disposal of wastes, process byproducts, or construction materials; spills; or unauthorized dumping of materials. Prior to the industrial development of the area, the land on Harbor's Point was farmed. About 65 years ago much of the property was acquired by Utica Gas and Electric (UGE), industrial development dates back to this time. UGE acquired the land, which is currently the New York Emulsion site from the Davies family in 1923, and in 1926 sold it to American Tar Products Company (Koppers Products Company). It is not known what use UGE made of this property before selling it to American Tar Products. Utilizing the coal-tar residue of the adjacent Harbor Point coal gas production plant, Koppers began the processing of road tar, pitches and creosote oils on site, and in later years added the production of asphalt emulsion. Tar Asphalt Service, a company located across Washington Street from the site, customarily picked up these products for use off site. Properties adjacent to or near the site have been used for storage of gasoline, kerosene, and other petroleum products; chemical manufacture; storage of coke; manufacture of water gas and coal gas; and steam generation of electricity. Large quantities of coal have in the past been stockpiled on the Harbor Point property, and railroad traffic across the area has been common. Koppers reportedly used an area just west of its property to clean road tar from its vehicles, and to dump tarry residues (Ref. 11, 12).

In March 1977 Koppers, shortly after beginning the production of emulsified asphalt, sold the New York Emulsion property and inventory to Suit-Kote Corporation, of Cortland, N.Y. Inventory at this time included both asphalt and road tar, as well as solvents including naphtha. Suit-Kote operated the asphalt emulsion plant for several years and ceased operations in 1983. Suit-Kote allegedly never processed road tar (a product of the destructive distillation of wood or coal) and confined its operations to production of asphalt emulsion (a petroleum-based product) only. Suit-Kote alleges it sold all the road tar products it had acquired with purchase of the site. The naphtha inventory was reportedly used up by Suit-Kote in the production of asphalt emulsion (Ref. 11).

Suit-Kote used only the portion of the facilities closest to Washington Street during its six years of operation (Ref. 11).

Suit-Kote alleges that no spill or accident occurred during its site tenure. The asphalt emulsion production process neither generates nor employs benzene or naphthalene, two contaminants that have been found at the Harbor Point property and attributed to the New York

Emulsion site. Suit-Kote has announced its intention of a general cleanup of the site (Ref. 11, 19).

4.2 Site Surface Characterization

The site is relatively level and is situated less than ten feet above Utica Harbor to the east and the Mohawk River to the west. The site has numerous tanks, buildings, and industrial utilities located within its boundaries and has a 0.25-acre (approximate) lagoon in the southwest quadrant of the property. The lagoon was constructed by Koppers as part of Spill Prevention, Control, and Countermeasures planning, and drains via the Lee Street storm sewer to the Mohawk River. A SPDES permit for this discharge is in effect until 1991. A number of onsite tanks have connections to a second storm sewer on Washington Street with drainage to Utica Harbor. (These two sewers were once joined.) The Washington Street sewer is apparently the only sewer draining the non-lagoon portion of the plant. Drums are located throughout the site. These drums were in rather segregated areas (near the lagoon and the lab) as shown on the site map. Most of these drums appear to be empty (Ref. 8, 11, 20, 1, and site visit).

One New York Emulsion building houses a laboratory, believed to have been used more extensively by Koppers than by Suit-Kote. Suit-Kote in fact claims that the lab was used by them for quality control only and that no exotic chemicals were employed. The laboratory does, however, contain chemicals remaining from Koppers' occupancy (Ref. 11).

Seven protected wetlands are found within one mile of the site. A Wildlife Management Area covers portions of three of these wetlands. A private wildlife preserve also exists among these wetlands. Potable water is supplied throughout nearly the entire area by the Utica Board of Water Supply, whose intakes lie 15 miles north of the site, at

Hinckley Reservoir. About twenty private wells are known in the Town of Deerfield, and 100 in the Town of Marcy. These serve an estimated 456 people (Ref. 14, 5, 6, 6a, 12).

Several utility trenches dissect the site and are in fact considered to play an important role in subsurface contaminant transport. These trenches carry both gas and sewer lines (Ref. 1).

4.3 Site Hydrogeology

The New York Emulsion site is located within the physiographic province of the Hudson-Mohawk Lowlands. Glacial scour formed the Mohawk Valley Trough beneath the site. This was subsequently filled with a sequence of glacial till, outwash, and lake sediments. Surficial deposits in this region consist of floodplain sediments of the Mohawk River (Ref. 21, 1).

Geologic mapping indicates that bedrock of the region consists of sedimentary rocks of Middle to Upper Ordovician age. The bedrock surface underlying the site is reported as being in the Utica Shale. The Utica Shale is a finely laminated black marine shale lithology that has scattered concentrations of pyrite and a relatively high fisility. Available data indicates that groundwater occurs along bedding planes and within fractures and joints in this formation. Groundwater within the Utica Shale may contain some component of hydrogen sulfide as a result of the natural dissolution of pyrite (iron disulfide) crystals and nodules in the lithology (Ref. 22, 23).

The unconsolidated surficial deposits at the adjacent Harbor Point property start with a layer of reworked or lodgement till directly on bedrock. This layer is overlain by 90 to 120 feet of glaciolacustrine sandy silts and clay sediments. Fluvial deposits including silty sand and gravel or sandy silt overlie the lacustrine sediments and are in turn overlain by organic silt and grayish clay floodplain sediments plus peat. The lower portions of these fluvial deposits appear to be less permeable than the upper. The entire site vicinity is covered with up to ten feet of heterogeneous fill material. Bedrock is found at depths in excess of 150 feet in areas of the Harbor Point property, but closer to the site it is found between 40 and 85 feet beneath the surface (Ref. 1, 12, 20).

Groundwater is found within all unconsolidated horizons underlying the site, although the glaciolacustrine layer appears to act to some extent as an aquiclude. Water level data from area monitoring wells indicate that the potentiometric surface is between 10 and 15 feet below the ground surface. Shallow and intermediate depth wells in the overburden (above the glaciolacustrine silt and clay) have similar water levels and are considered to be screened in the same aquifer. This overburden aquifer is believed to be isolated from the bedrock aquifer when the glaciolacustrine sediments are present, however, boring information collected near the site show that the glaciolucstrine layer is discontinuous and that there is probably connection between the bedrock and overburden aquifers. Therefore, for the purposes of HRS scoring, the overburden and bedrock aquifers will be treated collectively as the aquifer of concern (Ref. 1, 12).

Permeability within the glaciolacustrine silt and clay sediments ranges from 10^{-3} to 10^{-5} cm/sec. Due to the interaction between river stage and groundwater level on the Harbor Point property, it is difficult to estimate the average rate and direction of groundwater flow. Groundwater movement has at times been observed from the river towards the center of the property. Net movement nevertheless appears to be toward the river, at a very low rate (Ref. 1).

4.4 Site Contamination

Heavy tar-product accumulations were noted in sediments dredged from Utica Harbor by the New York State Department of Transportation in

April 1981. Naphthalene, acenaphthalene, phenanthrene, and anthracene were identified in this tar substance. These constituents are not characteristic of "oil-derived" tars and therefore it is unlikely the tar material was produced in the asphalt emulsion plant. Site assessments were conducted on the Harbor Point property and surrounding areas (including the NY Emulsions site) in December 1983 by Niagara Mohawk and in January 1984 by USEPA to identify the probably source of the contamination. Based on results of these assessments, Niagara Mohawk commissioned a site investigation and produced the first in a series of reports in March 1984. The investigation covered contamination of both land and river. In addition, NYSDEC sampled tars at and near the NY Emulsion site in 1985, demonstrating exactness of match between tars found on and nearby off site. A naphthalene peak was isolated in both onsite and offsite samples (Ref. 18, 12, 24).

Subsurface investigations by Niagara Mohawk on the Harbor Point property revealed a surficial layer of waste material (3-6 feet deep in the area of the New York Emulsion site) consisting of building debris, gas production process wastes (i.e., coal-tar related materials), and other miscellaneous wastes including municipal landfill refuse. Wastes in the center of the Harbor Point property and west of the New York Emulsion site, contained relatively high levels of polynuclear aromatics (PAHs). Soil concentrations of naphthalene reached 34,300 mg/kg near the southwest corner of the New York Emulsion site in the area where Koppers allegedly cleaned vehicles and deposited road tar materials. A hard "asphalt-like" substance was observed at or near the ground surface here. Oils and tars were evident in test pits and monitoring wells on the periphery of the New York Emulsion site (Ref. 20, 1).

Groundwater studies showed highest Total Organic Carbon levels near the New York Emulsion site and also near a gas storage holder 375 feet west of the plant on the Harbor Point property. Test pits showed tar to be concentrated at or near the soil surface. Contamination in the soil was more widespread in the upper fill layers than in the underlying fluvial silts and clays while contamination in groundwater was confined to the shallow and intermediate levels. Most contaminants are thought to be confined to the fill and alluvial horizons and not in the bedrock. Niagara Mohawk constructed isoconcentration plots from groundwater data that illustrated the centers of phenol, naphthalene, acenaphthylene, and acenaphthene concentration downgradient of the New York Emulsion site. All these substances are coal-tar derivatives. The Niagara Mohawk first-round report pointed to a "common source" of acenaphthene and acenaphthylene "in the center of the site between the emulsions plant and the gas storage holder" while the second-round report judged there to be two sources of these materials (Ref. 20, 1, 12).

No organic vapors were detected on site during 1984 investigations (Ref. 12).

Investigations of the Mohawk River could not demonstrate that water quality had been solely affected by the Harbor Point property. Sediments near the point contained measurable levels of PAHs, but the picture was complicated by the discovery of acenaphthylene in sediments 1,000 feet upstream as well. Major PAH sediment concentrations were found in Utica Harbor and at the discharge of the Lee Street sewer into the river (Ref. 25).

On the basis of first-round findings, the entire northern part of the Harbor Point property was eliminated from further consideration, and the investigative effort was brought to bear more directly upon the area surrounding the New York Emulsion property, the gas storage tank, and sewer lines. It was stated that first-round investigations had indicated the possibility of a "petroleum-based source" of contamination (presumably a reference to the emulsified asphalt operation at the New York Emulsion site), and investigators therefore announced plans for a special effort to determine the makeup of tars and oils found at these locations--i.e to determine whether they were coal-tar based as had originally been thought, or petroleum-based. Results of investigations on this critical point, however, were not available during this Phase I investigation (Ref. 1).

Twenty-nine monitoring wells were constructed and sampled for volatiles and other compounds in conjunction with the second-round investigation at the Harbor Point property. Cyanide was definitively attributed to the former gas purifier boxes west of the NY Emulsion site, on Niagara Mohawk property; naphthalene was, on the basis of groundwater data, attributed by Niagara Mohawk to both the New York Emulsion site and an offsite source to the north; New York Emulsion appeared to investigators as a source of benzene which was measured in groundwater just east of the NY Emulsion site at 11,000 ppb. Contaminant loading to the river was determined to be heaviest from the sewers, with transport by groundwater being of secondary importance. The contribution from surface runoff was deemed insignificant (Ref. 1, 2).

Investigations of the adjacent Harbor Point property by Niagara Mohawk, as well as a surficial tar sample collected on the New York Emulsion site by NYSDEC in 1985, indicate that at least a portion of the observed (benzene and naphthalene) groundwater contamination at Harbor Point is attributable to New York Emulsion. Because the production of road tars (by Koppers Products Company) at the New York Emulsion site involved utilization of the coal tar byproduct from the Harbor Point coal gasification plant, it is difficult to separate these two sites from one another for the purpose of establishing the source of coal tar-related contaminants in area groundwater. However, it does not appear likely that the occurrence of benzene and naphthalene in Harbor Point groundwater samples is related to the more recent production of emulsified asphalt at the New York Emulsion site, since the emulsified asphalt process reportedly neither uses nor produces either compound. While both naphthalene and benzene may be petroleum-derived (as is asphalt itself) or coal tar-derived, they are isolated from petroleum only after catalytic reprocessing of the lighter fractions. Again, however, regardless of the time of occurrence or process involved at that time, the benzene and naphthalene contamination of area groundwater is considered to be at least partially attributable to the New York Emulsion site. On this basis, an HRS score for the site has been developed using benzene and naphthalene as observed contaminant releases to groundwater (Ref. 11, 26).

NARRATIVE

5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM

5.1 Narrative Summary

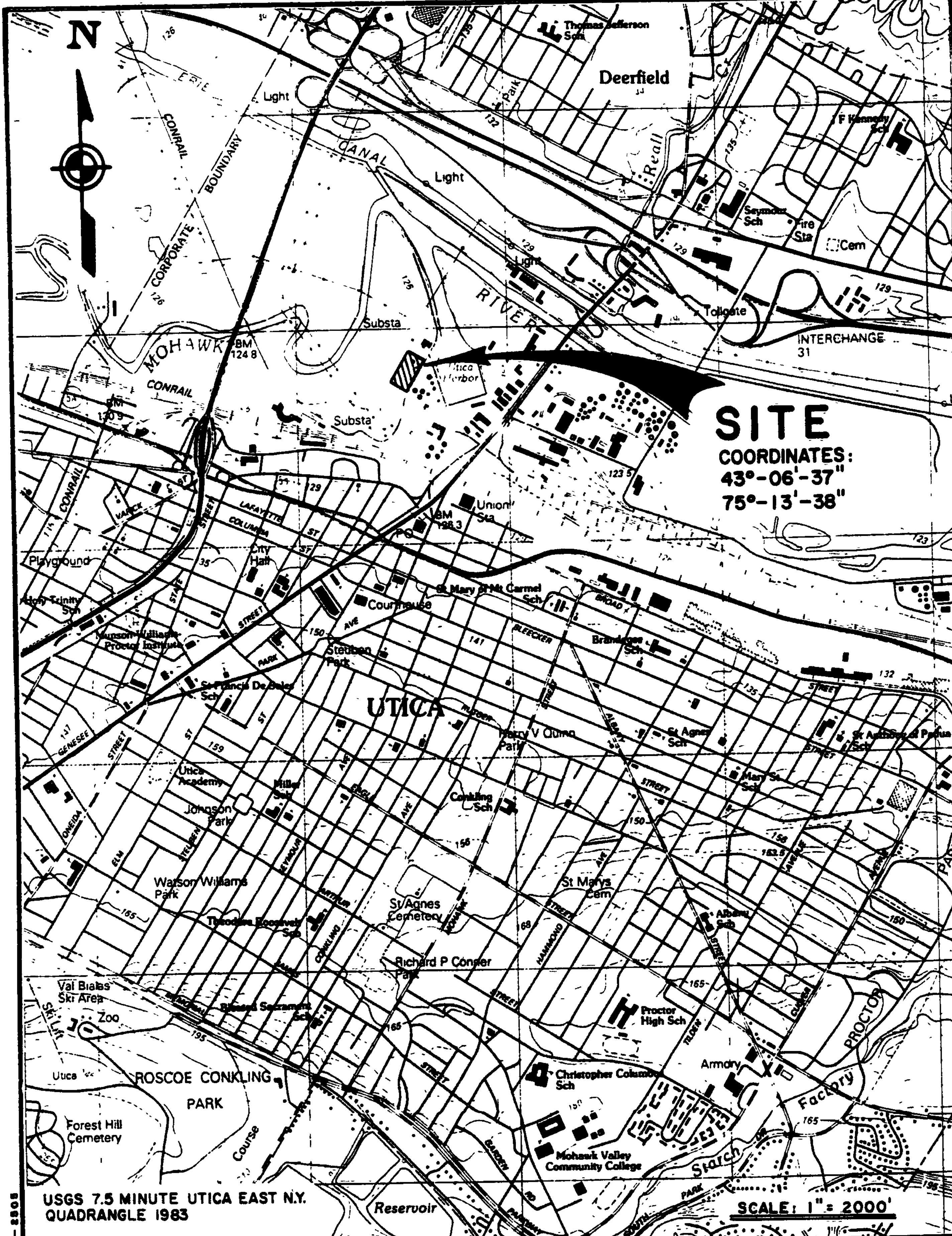
New York Emulsion Tar Products
Washington Street
Utica (C) Oneida (C) New York

The 2.96-acre New York Emulsion Tar Products site is located on the north side of the City of Utica, New York, between the Mohawk River and Utica Harbor. It is presently owned by Suit-Kote Corporation, which processed emulsified asphalt there from 1977 to 1983. The site's previous owner, Koppers Products Company, processed both road tar products and asphalt emulsion prior to turning it over to Suit-Kote.

No waste products were associated with either operation, although hazardous materials attributable to tar products production have been found in soils and groundwater near and around the site. A number of related materials have also been found in Mohawk River sediments. These substances have included PAHs and volatile organics. The site is located in an area where such materials were used or produced at various facilities on adjoining properties. Protected wetlands are found within one mile of the site, and over 100 potable water wells within three miles.

Niagara Mohawk, owns one parcel of adjacent land known as Harbor Point and has been investigating contamination on that property since early 1984. Some of their investigations extend onto the New York Emulsion property.

LOCATION



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CONSULTING ENGINEERS
NEW YORK NEW JERSEY

SITE LOCATION MAP
NEW YORK EMULSION TAR PRODUCTS

FIGURE 1

DWG. NO. A-2505

Facility name: New York Emulsion Tar Products

Location: Washington Street, Utica (c), Oneida County

EPA Region: II

Person(s) in charge of the facility: William Fowlston, Director of Safety & Environment

Name of Reviewer: URS Corporation **Date:** November 11, 1987

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Originally site of manufacture and distribution of tar products, and later of asphalt emulsion. Investigations around perimeter of site have led to conclusion that site is source of naphthalene and benzene. Transport of contaminants to nearby surface water via storm drains and groundwater. Further investigation required on site itself .

Scores: S_M = 10.74 (S_{gw} = 17.35 S_{sw} = 6.66 S_a = 0.00)

S_{FE} = 0.00

S_{DC} = 62.50

HRS COVER SHEET

Ground Water Route Work Sheet					
Rating Factor	**Assigned Value (Circle One)**	**Multiplier**	**Score**	**Max. Score**	**Ref. (Section)**
1 Observed Release	0 45	1	45	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score			15	
3 Containment	0 1 2 3	1		3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	12	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		13	26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	8	40	
	Total Targets Score		17	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			9,945	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} =	17.35		

GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	**Assigned Value (Circle One)**	**Multi-plier**	**Score**	**Max. Score**	**Ref. (Section)**
[1] Observed Release	0 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line [4]. If observed release is given a value of 0, proceed to line [2].					
[2] Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 2 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	6	6	
Physical State	0 1 2 3	1	3	3	
	Total Route Characteristics Score		11	15	
[3] Containment	0 1 2 3	1	3	3	4.3
[4] Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	12	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		13	26	
[5] Targets					4.5
Surface Water Use	0 1 2 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 3	2	4	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		10	55	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			4290	64,350	
[7] Divide line [6] by 64,350 and multiply by 100		S_{sw} = 6.66			

SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	**Assigned Value (Circle One)**	**Multi-plier**	**Score**	**Max. Score**	**Ref. (Section)**
1 Observed Release	0 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Targets Score				39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a = 0.00			

AIR ROUTE WORK SHEET

	s	s^2
Groundwater Route Score (S_{gw})	17.35	301.02
Surface Water Route Score (S_{sw})	6.66	43.36
Air Route Score (S_a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		345.38
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		18.58
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		10.74

WORKSHEET FOR COMPUTING S_M

NO DOCUMENTED FIRE OR EXPLOSION THREAT

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
	Total Targets Score			24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100	S_{FE} = 0.00				

FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1	3	3	8.2
3 Containment	0 15	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	20	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
	Total Targets Score		20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			13,500	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = 62.50			

DIRECT CONTACT WORK SHEET

5.4 HRS Documentation Records

FACILITY NAME: New York Emulsion Tar Products

LOCATION: Washington Street, Utica

Oneida County, New York

GROUNDWATER ROUTE

1 OBSERVED RELEASE

o CONTAMINANTS DETECTED (5 MAXIMUM):

Naphthalene, benzene (Ref. 1, 2).

o RATIONALE FOR ATTRIBUTING THE CONTAMINANTS TO THE FACILITY:

Contaminants measured in shallow and medium depth groundwater in vicinity of site. Isoconcentration plot lines elevated around site perimeter (Ref. 1, 2).

Score <u>45</u>

***

2 ROUTE CHARACTERISTICS

<u>DEPTH TO AQUIFER OF CONCERN</u>

o NAME/DESCRIPTION OF AQUIFER(S) OF CONCERN:

Observed release precludes evaluation of this factor.

o DEPTH(S) FROM THE GROUND SURFACE TO THE HIGHEST SEASONAL LEVEL OF THE SATURATED ZONE [WATER TABLE(S)] OF THE AQUIFER OF CONCERN:

Observed release precludes evaluation of this factor.

o DEPTH FROM THE GROUND SURFACE TO THE LOWEST POINT OF WASTE DISPOSAL/STORAGE:

Observed release precludes evaluation of this factor.

Score <u>0</u>

NET PRECIPITATION

o MEAN ANNUAL OR SEASONAL PRECIPITATION (LIST MONTHS FOR SEASONAL):

Observed release precludes evaluation of this factor.

o MEAN ANNUAL LAKE OR SEASONAL EVAPORATION (LIST MONTHS FOR SEASONAL):

Observed release precludes evaluation of this factor.

o NET PRECIPITATION (SUBTRACT THE ABOVE FIGURES):

Observed release precludes evaluation of this factor.

Score 0

PERMEABILITY OF UNSATURATED ZONE

o SOIL TYPE IN UNSATURATED ZONE:

Observed release precludes evaluation of this factor.

o PERMEABILITY ASSOCIATED WITH SOIL TYPE:

Observed release precludes evaluation of this factor.

Score 0

PHYSICAL STATE

o PHYSICAL STATE OF SUBSTANCES AT TIME OF DISPOSAL (OR AT PRESENT TIME FOR GENERATED GASES):

Observed release precludes evaluation of this factor.

Score 0

***

3 CONTAINMENT

CONTAINMENT

o METHOD(S) OF WASTE OR LEACHATE CONTAINMENT EVALUATED:

Observed release precludes evaluation of this factor.

o METHOD WITH HIGHEST SCORE:

Observed release precludes evaluation of this factor.

Score 0

***

4 WASTE CHARACTERISTICS

TOXICITY AND PERSISTENCE

o COMPOUND(S) EVALUATED:

Naphthalene and benzene (Ref. 1, 2).

o COMPOUND WITH HIGHEST SCORE:

Benzene

	Toxicity	Persistence	Score
Benzene	3	1	12
Naphthalene	2	1	9

(Ref. 3, 4)

Score 12

HAZARDOUS WASTE QUANTITY

o TOTAL QUANTITY OF HAZARDOUS SUBSTANCES AT THE FACILITY, EXCLUDING THOSE WITH A CONTAINMENT SCORE OF 0 (GIVE A REASONABLE ESTIMATE EVEN IF QUANTITY IS ABOVE MAXIMUM):

Unknown. Minimum non-zero amount presumed.

Score 1

o BASIS OF ESTIMATING AND/OR COMPUTING WASTE QUANTITY:

N/A

***

5 TARGETS

GROUNDWATER USE

o USE(S) OF AQUIFER(S) OF CONCERN WITHIN A 3-MILE RADIUS OF THE FACILITY:

Drinking water. No municipal water from alternate unthreatened sources presently available (Ref. 5).

Score 3

DISTANCE TO NEAREST WELL

o LOCATION OF NEAREST WELL DRAWING FROM AQUIFER OF CONCERN OR OCCUPIED BUILDING NOT SERVED BY A PUBLIC WATER SUPPLY:

Nearest known well on Smith Hill Road, Town of Deerfield (Ref. 5, 6a).

o DISTANCE TO ABOVE WELL OR BUILDING:

Approximately 2.8 miles (Distance Value = 1) (Ref. 5).

POPULATION SERVED BY GROUNDWATER WELLS WITHIN A 3-MILE RADIUS

o IDENTIFIED WATER-SUPPLY WELL(S) DRAWING FROM AQUIFER(S) OF CONCERN WITHIN A 3-MILE RADIUS AND POPULATIONS SERVED BY EACH:

Smith Hill Road and Walker Road, Town of Deerfield; Town of Marcy (Ref. 5, 6a).

o COMPUTATION OF LAND AREA IRRIGATED BY SUPPLY WELL(S) DRAWING FROM AQUIFER(S) OF CONCERN WITHIN A 3-MILE RADIUS, AND CONVERSION TO POPULATION (1.5 PEOPLE PER ACRE):

None (Ref. 7).

o TOTAL POPULATION SERVED BY GROUNDWATER WITHIN A 3-MILE RADIUS:

Town of Deerfield, 76; Town of Marcy, 380. Total 456. (Population value = 2) (Ref. 3, 5, 6a)

Score 8

SURFACE WATER ROUTE

1 OBSERVED RELEASE

o CONTAMINANTS DETECTED IN SURFACE WATER AT THE FACILITY OR DOWNHILL FROM IT (5 MAXIMUM):

None observed.

o RATIONALE FOR ATTRIBUTING THE CONTAMINANTS TO THE FACILITY:

N/A

Score 0

***

2 ROUTE CHARACTERISTICS

FACILITY SLOPE AND INTERVENING TERRAIN

o AVERAGE SLOPE OF FACILITY IN PERCENT:

Facility relatively level (Ref. site visit).

o NAME/DESCRIPTION OF NEAREST DOWNSLOPE SURFACE WATER:

Utica Harbor is the nearest downslope surface water body and is located east of the NY Emulsions facility. The harbor is maintained by the Department of Transportation and is connected to the Mohawk River (Ref. 8, 9, 10.) In addition, storm sewers around the site discharge to the harbor.

o AVERAGE SLOPE OF TERRAIN BETWEEN FACILITY AND ABOVE-CITED SURFACE WATER BODY IN PERCENT:

Approximately 1% slope variable to north, northwest and northeast (Ref. 8).

o IS THE FACILITY LOCATED EITHER TOTALLY OR PARTIALLY IN SURFACE WATER?

No (Ref. 8 and site visit).

Score 0

o IS THE FACILITY COMPLETELY SURROUNDED BY AREAS OF HIGHER ELEVATION?

No, the area has low relief, gently sloping variably to the east, west, and northwest (Ref. 8).

<u>1-YEAR 24-HOUR RAINFALL IN INCHES</u>

2.3 inches (Ref. 3).

Score <u>2</u>

<u>DISTANCE TO NEAREST DOWNSLOPE SURFACE WATER</u>

Utica harbor is approximately 250 feet east of the site (Ref. 8).

Score <u>3</u>

<u>PHYSICAL STATE OF WASTE</u>

Viscous liquid (Ref. 11, 12).

Score <u>3</u>

***

3 CONTAINMENT

<u>CONTAINMENT</u>

o METHOD(S) OF WASTE OR LEACHATE CONTAINMENT EVALUATED:

Landfill only (Ref. site visit).

o METHOD WITH HIGHEST SCORE:

Landfill. Not covered, no diversion system present (Ref. 3).

Score <u>3</u>

***

4 WASTE CHARACTERISTICS

TOXICITY AND PERSISTENCE

o COMPOUND(S) EVALUATED

Naphthalene and benzene (Ref. 1, 2).

o COMPOUND WITH HIGHEST SCORE:

Benzene

	Toxicity	Persistence	Score
Benzene	3	1	12
Naphthalene	2	1	9

(Ref. 3, 4)

Score 12

HAZARDOUS WASTE QUANTITY

o TOTAL QUANTITY OF HAZARDOUS SUBSTANCES AT THE FACILITY EXCLUDING THOSE WITH A CONTAINMENT SCORE OF 0 (GIVE A REASONABLE ESTIMATE EVEN IF QUANTITY IS ABOVE MAXIMUM):

Unknown. Minimum non-zero amount presumed.

Score 1

o BASIS OF ESTIMATING AND/OR COMPUTING WASTE QUANTITY:

N/A

*****

5 TARGETS

SURFACE WATER USE

o USE(S) OF SURFACE WATER WITHIN 3 MILES DOWNSTREAM OF THE HAZARDOUS SUBSTANCE:

Fishing and boating (Ref. 13, 3).

Score 2

o IS THERE TIDAL INFLUENCE?

There is no tidal influence on the site (Ref. 8).

DISTANCE TO A SENSITIVE ENVIRONMENT

o DISTANCE TO 5-ACRE (MINIMUM) COASTAL WETLAND, IF 2 MILES OR LESS:

None within 2 miles of the site (Ref. 14).

o DISTANCE TO 5-ACRE (MINIMUM) FRESH-WATER WETLAND, IF 1 MILE OR LESS:

Fresh-water wetlands UE-2, UE-3, UE-4, UE-5, UE-6, UE-9, and UE-10 are within one mile of the site. Fresh-water wetland UE-9 is the closest at 1,200 feet northwest of the site (Ref. 14).

o DISTANCE TO CRITICAL HABITAT OF AN ENDANGERED SPECIES OR NATIONAL WILDLIFE REFUGE, IF 1 MILE OR LESS:

None within 1 mile (Ref. 14).

Score 2

POPULATION SERVED BY SURFACE WATER

o LOCATION(S) OF WATER-SUPPLY INTAKE(S) WITHIN 3 MILES (FREE-FLOWING BODIES) OR 1 MILE (STATIC WATER BODIES) DOWNSTREAM OF THE HAZARDOUS SUBSTANCE AND POPULATION SERVED BY EACH INTAKE:

No water supply intakes within 3 miles of the site (Ref. 15, 12).

o COMPUTATION OF LAND AREA IRRIGATED BY ABOVE-CITED INTAKE(S) AND CONVERSION TO POPULATION (1.5 PEOPLE PER ACRE):

N/A

o TOTAL POPULATION SERVED:

N/A

o NAME/DESCRIPTION OF NEAREST OF ABOVE WATER BODIES:

N/A

o DISTANCE TO ABOVE-CITED INTAKES, MEASURED IN STREAM MILES.

N/A

Score 0

AIR ROUTE

1 OBSERVED RELEASE

o CONTAMINANTS DETECTED:

Limited air monitoring data available. Photovac TIP measurements for organic vapors taken during site inspection. None detected (Ref. site visit).

o DATE AND LOCATION OF DETECTION OF CONTAMINANTS

No observed air release.

o METHODS USED TO DETECT THE CONTAMINANTS:

No observed air release.

o RATIONALE FOR ATTRIBUTING THE CONTAMINANTS TO THE SITE:

No observed air release.

Score 0

***

2 WASTE CHARACTERISTICS

REACTIVITY AND INCOMPATIBILITY

o MOST REACTIVE COMPOUND:

No observed air release.

o MOST INCOMPATIBLE PAIR OF COMPOUNDS:

No observed air release.

Score 0

TOXICITY

o MOST TOXIC COMPOUND:

No observed air release.

Score 0

HAZARDOUS WASTE QUANTITY

o TOTAL QUANTITY OF HAZARDOUS WASTE:

No observed air release.

Score 0

o BASIS OF ESTIMATING AND/OR COMPUTING WASTE QUANTITY:

No observed air release.

***

3 TARGETS

POPULATION WITHIN 4-MILE RADIUS

o UNDERLINE RADIUS USED, GIVE POPULATION, AND INDICATE HOW DETERMINED:

0 to 4 mi   0 to 1 mi   0 to 1/2 mi   0 to 1/4 mi

No observed air release.

Score 0

DISTANCE TO A SENSITIVE ENVIRONMENT

o DISTANCE TO 5-ACRE (MINIMUM) COASTAL WETLAND, IF 2 MILES OR LESS:

No observed air release.

- o DISTANCE TO 5-ACRE (MINIMUM) FRESH-WATER WETLAND, IF 1 MILE OR LESS:

No observed air release.

- o DISTANCE TO CRITICAL HABITAT OF AN ENDANGERED SPECIES, IF 1 MILE OR LESS:

No observed air release.

Score 0

LAND USE

- o DISTANCE TO COMMERCIAL/INDUSTRIAL AREA, IF 1 MILE OR LESS:

No observed air release.

- o DISTANCE TO NATIONAL OR STATE PARK, FOREST, OR WILDLIFE RESERVE, IF 2 MILES OR LESS:

No observed air release.

- o DISTANCE TO RESIDENTIAL AREA, IF 2 MILES OR LESS:

No observed air release.

- o DISTANCE TO AGRICULTURAL LAND IN PRODUCTION WITHIN PAST 5 YEARS, IF 1 MILE OR LESS:

No observed air release.

- o DISTANCE TO PRIME AGRICULTURAL LAND IN PRODUCTION WITHIN PAST 5 YEARS, IF 2 MILES OR LESS:

No observed air release.

o IS A HISTORIC OR LANDMARK SITE (NATIONAL REGISTER OR HISTORIC PLACES AND NATIONAL NATURAL LANDMARKS) WITHIN THE VIEW OF THE SITE?

No observed air release.

Score 0

FIRE AND EXPLOSION

1 CONTAINMENT

o HAZARDOUS SUBSTANCES PRESENT:

No documented fire or explosion threat (Ref. 16).

o TYPE OF CONTAINMENT, IF APPLICABLE

No documented fire or explosion threat.

Score 0

***

2 WASTE CHARACTERISTICS

DIRECT EVIDENCE

o TYPE OF INSTRUMENT AND MEASUREMENTS:

No documented fire or explosion threat.

Score 0

IGNITABILITY

o COMPOUND USED:

No documented fire or explosion threat.

Score 0

REACTIVITY

o MOST REACTIVE COMPOUND:

No documented fire or explosion threat.

Score 0

INCOMPATIBILITY

o MOST INCOMPATIBLE PAIR OF COMPOUNDS:

No documented fire or explosion threat.

Score 0

HAZARDOUS WASTE QUANTITY

o TOTAL QUANTITY OF HAZARDOUS SUBSTANCES AT THE FACILITY:

No documented fire or explosion threat.

Score 0

o BASIS OF ESTIMATING AND/OR COMPUTING WASTE QUANTITY:

No documented fire or explosion threat.

***

3 TARGETS

DISTANCE TO NEAREST POPULATION

No documented fire or explosion threat.

Score 0

DISTANCE TO NEAREST BUILDING

No documented fire or explosion threat.

Score 0

DISTANCE TO SENSITIVE ENVIRONMENT

o DISTANCE TO WETLANDS:

No documented fire or explosion threat.

o DISTANCE TO CRITICAL HABITAT:

No documented fire or explosion threat.

Score 0

LAND USE

- o DISTANCE TO COMMERCIAL/INDUSTRIAL AREA, IF 1 MILE OR LESS:

No documented fire or explosion threat.

- o DISTANCE TO NATIONAL OR STATE PARK, FOREST, OR WILDLIFE RESERVE, IF 2 MILES OR LESS:

No documented fire or explosion threat.

- o DISTANCE TO RESIDENTIAL AREA, IF 2 MILES OR LESS:

No documented fire or explosion threat.

- o DISTANCE TO AGRICULTURAL LAND IN PRODUCTION WITHIN PAST 5 YEARS, IF 1 MILE OR LESS:

No documented fire or explosion threat.

- o DISTANCE TO PRIME AGRICULTURAL LAND IN PRODUCTION WITHIN PAST 5 YEARS, IF 2 MILES OR LESS:

No documented fire or explosion threat.

- o IS A HISTORIC OR LANDMARK SITE (NATIONAL REGISTER OR HISTORIC PLACES AND NATIONAL NATURAL LANDMARKS) WITHIN THE VIEW OF THE SITE?

No documented fire or explosion threat.

Score 0

POPULATION WITHIN 2-MILE RADIUS

No documented fire or explosion threat.

Score 0

BUILDINGS WITHIN 2-MILE RADIUS

No documented fire or explosion threat.

Score 0

DIRECT CONTACT

1 OBSERVED INCIDENT

o DATE, LOCATION, AND PERTINENT DETAILS OF INCIDENT:

None observed.

Score 0

***

2 ACCESSIBILITY

o DESCRIBE TYPE OF BARRIER(S):

Barrier does not completely surround facility (Ref. site visit).

Score 3

***

3 CONTAINMENT

o TYPE OF CONTAINMENT, IF APPLICABLE:

Materials have been spilled on ground (Ref. 12).

Score 15

***

4 WASTE CHARACTERISTICS

TOXICITY

o COMPOUNDS EVALUATED:

Naphthalene and benzene (Ref. 1, 2).

o COMPOUND WITH HIGHEST SCORE:

Benzene

(Ref. 3, 4)

	Toxicity
Benzene	3
Naphthalene	2

Score 3

***

5 TARGETS

POPULATION WITHIN ONE-MILE RADIUS

Estimated at 18,908 (Ref. 8, 17).

Score 5

DISTANCE TO CRITICAL HABITAT (OF ENDANGERED SPECIES)

None within 1 mile of the site (Ref. 14).

Score 0

DATA SOURCES AND REFERENCES

1. Harbor Point Property Land Investigations, Results of Extended Site Investigations, Step 3 Land Report, Niagara Mohawk Power Corporation, March 1985 (Revised May 1985).

2. Harbor Point Property River Investigations, Remedial Design Concepts, Step 4 River Report, Niagara Mohawk Power Corporation, June 1986.

3. Uncontrolled Hazardous Waste Site Ranking System, A Users Manual (HW-10), United States Environmental Protection Agency 1984, Figures 4 and 8, Tables 2, 3, 4, 5, and 9, pp. 24, 25, and 27.

4. Dangerous Properties of Industrial Materials - Sixth Edition, N. Irving Sax, Van Nostrand Reinhold Company, New York, 1984.

5. Map and Statement by Donald S. Youlen, Supervisor, Town of Deerfield, New York, October 26, 1987.

6. Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, to Russell Logalbo, Utica Board of Water Supply, September 10, 1987.

6a. Karl P. Maxwell, Supervisor, Town of Marcy, New York, to Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, November 12, 1987.

7. Robin Mangini, District Conservationist, United States Department of Agriculture, Soil Conservation Service, to Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, September 14, 1987.

8. USGS Topographic Maps, 7.5 Series: Utica East, New York, Quadrangle, 1983; Utica West, New York, Quadrangle, 1955; South Trenton, New York, Quadrangle, 1983; Oriskany, New York, Quadrangle, 1955.

9. City of Utica, Oneida County, New York - Tax Map, Sheet No. 318.08.

10. City of Utica, Oneida County, New York - Aerial Maps, Sheet Nos. 306, 318.

11. William Fowlston, Safety Director, Suit-Kote Corporation, to Daniel W. Rothman, Phase I Investigation Project Manager, URS Corporation, September 16, 1987.

12. Harbor Point Property Land Investigations, Proposal for Initial Site Survey, Step 1 Land Report, Niagara Mohawk Power Corporation, March 1984.

13. Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, telecon to James Doyle, Sanitary Engineer, NYSDEC Region 6, October 8, 1987.

14. Leonard E. Ollivett, Conservation Biologist, NYSDEC Region 6, to Linda J. Clark, Project Geologist, URS Corporation, August 18, 1987.

15. New York State Atlas of Community Water System Sources, New York State Department of Health, Division of Environmental Protection, Bureau of Public Water Supply Protection, 1982.

16. Telecon Karen A. Hartnett, URS Corporation, to Fire Chief, City of Utica, September 2, 1987.

17. 1980 Census of Population, Number of Inhabitants, New York, United States Department of Commerce, Bureau of the Census.

REF. 1

HARBOR POINT PROPERTY LAND INVESTIGATIONS
STEP 3 LAND REPORT

This Privileged and Confidential Material
is on file at the offices of NYSDEC
50 Wolf Road, Albany, New York

REF. 2

HARBOR POINT PROPERTY RIVER INVESTIGATIONS
STEP 4 RIVER REPORT

This Privileged and Confidential Material
is on file at the offices of NYSDEC
50 Wolf Road, Albany, New York

REF. 3

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

3

TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

TYPE OF MATERIAL	APPROXIMATE RANGE OF HYDRAULIC CONDUCTIVITY	ASSIGNED VALUE
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$< 10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$< 10^{-5} \geq 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone,dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$< 10^{-3} \geq 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$> 10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

TABLE 3

CONTAINMENT VALUES FOR GROUND WATER ROUTE

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility using the following guidance.

A. Surface Impoundment

	Assigned Value
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3

B. Containers

	Assigned Value
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3

C. Piles

	Assigned Value
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstablized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstablized, and no liner	3

D. Landfill

	Assigned Value
Essentially non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

3

TABLE 4
WASTE CHARACTERISTICS VALUES FOR SOME COMMON CHEMICALS

CHEMICAL/COMPOUND	[illegible]	[illegible]	[illegible]	[illegible]
Acetaldehyde	3	0	3	2
Acetic Acid	3	0	2	1
Acetone	2	0	3	0
Aldrin	3	3	1	0
Ammonia, Anhydrous	3	0	1	0
Aniline	3	1	2	0
Benzene	3	1	3	0
Carbon Tetrachloride	3	3	0	0
Chlordane	3	3	0*	0*
Chlorobenzene	2	2	3	0
Chloroform	3	3	0	0
Cresol-O	3	1	2	0
Cresol-M&P	3	1	1	0
Cyclohexane	2	2	3	0
Endrin	3	3	1	0
Ethyl Benzene	2	1	3	0
Formaldehyde	3	0	2	0
Formic Acid	3	0	2	0
Hydrochloric Acid	3	0	0	0
Isopropyl Ether	3	1	3	1
Lindane	3	3	1	0
Methane	1	1	3	0
Methyl Ethyl Ketone	2	0	3	0
Methyl Parathion in Xylene Solution	3	0Δ	3	2
Naphthalene	2	1	2	0
Nitric Acid	3	0	0	0
Parathion	3	0Δ	1	2
PCB	3	3	0Δ	0Δ
Petroleum, Kerosene (Fuel Oil No. 1)	3	1	2	0
Phenol	3	1	2	0
Sulfuric Acid	3	0	0	2
Toluene	2	1	3	0
Trichlorobenzene	2	3	1	0
α-Trichloroethane	2	2	1	0
Xylene	2	1	3	0

[1] Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Reinhold Co., New York, 4th ed., 1975. The highest rating listed under each chemical is used.

[2] JRB Associates, Inc., Methodology for Rating the Hazard Potential of Waste Disposal Sites, May 5, 1980.

[3] National Fire Protection Association, National Fire Codes, Vol. 13, No. 49, 1977.

*Professional judgment based on information contained in the U.S. Coast Guard CHRIS Hazardous Chemical Data, 1978.

Δ Professional judgment based on existing literature.

TABLE 5

PERSISTENCE (BIODEGRADABILITY) OF SOME ORGANIC COMPOUNDS*

VALUE = 3 HIGHLY PERSISTENT COMPOUNDS

- aldrin
- benzopyrene
- benzothiazole
- benzothiophene
- benzyl butyl phthalate
- bromochlorobenzene
- bromoform butanal
- bromophenyl phenyl ether
- chlordane
- chlorohydroxy benzophenone
- bis-chloroisopropyl ether
- m-chloronitrobenzene
- DDE
- DDT
- dibromobenzene
- dibutyl phthalate
- 1, 4-dichlorobenzene
- dichlorodifluoroethane
- dieldrin
- diethyl phthalate
- di(2-ethylhexyl)phthalate
- dihexyl phthalate
- di-isobutyl phthalate
- dimethyl phthalate
- 4,6-dinitro-2-aminophenol
- dipropyl phthalate
- endrin
- heptachlor
- heptachlor epoxide
- 1,2,3,4,5,7,7-heptachloronorbornene
- hexachlorobenzene
- hexachloro-1,3-butadiene
- hexachlorocyclohexane
- hexachloroethane
- methyl benzothiazole
- pentachlorobiphenyl
- pentachlorophenol
- 1,1,3,3-tetrachloroacetone
- tetrachlorobiphenyl
- thiomethylbenzothiazole
- trichlorobenzene
- trichlorobiphenyl
- trichlorofluoromethane
- 2,4,6-trichlorophenol
- triphenyl phosphate
- bromodichloromethane
- bromoform
- carbon tetrachloride
- chloroform
- chlorodibromomethane
- dibromodichloroethane
- tetrachloroethane
- 1,1,2-trichloroethane

VALUE = 1 SOMEWHAT PERSISTENT COMPOUNDS

- acetylene dichloride
- behenic acid, methyl ester
- benzene
- benzene sulfonic acid
- butyl benzene
- butyl bromide
- e-caprolactam
- carbon-disulfide
- o-cresol
- decane
- 1,2-dichloroethane
- 1,2-dimethoxy benzene
- 1,3-dimethyl naphthalene
- 1,4-dimethyl phenol
- dioctyl adipate
- n-dodecane
- ethyl benzene
- 2-ethyl-n-hexane
- o-ethyltoluene
- isodecane
- isopropyl benzene
- limonene
- methyl ester of lignoceric acid
- methane
- 2-methyl-5-ethyl-pyridine
- methyl naphthalene
- methyl palmitate
- methyl phenyl carbinol
- methyl stearate
- naphthalene
- nonane
- octane
- octyl chloride
- pentane
- phenyl benzoate
- phthalic anhydride
- propylbenzene
- 1-terpineol
- toluene
- vinyl benzene
- xylene

VALUE = 2 PERSISTENT COMPOUNDS

- acenaphthylene
- atrazine
- (diethyl) atrazine
- barbital
- borneol
- bromobenzene
- camphor
- chlorobenzene
- 1,2-bis-chloroethoxy ethane
- b-chloroethyl methyl ether
- chloromethyl ether
- chloromethyl ethyl ether
- 3-chloropyridine
- di-t-butyl-p-benzoquinone
- dichloroethyl ether
- dihydrocarvone
- dimethyl sulfoxide
- 2,6-dinitrotoluene
- cis-2-ethyl-4-methyl-1,3-dioxolane
- trans-2-ethyl-4-methyl-1,3-dioxolane
- guaiacol
- 2-hydroxyadiponitrile
- isophorone
- indene
- isoborneol
- isopropenyl-4-isopropyl benzene
- 2-methoxy biphenyl
- methyl biphenyl
- methyl chloride
- methylindene
- methylene chloride
- nitroanisole
- nitrobenzene
- 1,1,2-trichloroethylene
- trimethyl-trioxo-hexahydro-triazine isomer

VALUE = 0 NONPERSISTENT COMPOUNDS

- acetaldehyde
- acetic acid
- acetone
- acetophenone
- benzoic acid
- di-isobutyl carbinol
- docosane
- eicosane
- ethanol
- ethylamine
- hexadecane
- methanol
- methyl benzoate
- 3-methyl butanol
- methyl ethyl ketone
- 2-methylpropanol
- octadecane
- pentadecane
- pentanol
- propanol
- propylamine
- tetradecane
- n-tridecane
- n-undecane

3

TABLE 9

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

A. Surface Impoundment

	Assigned Value
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3

B. Containers

	Assigned Value
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3

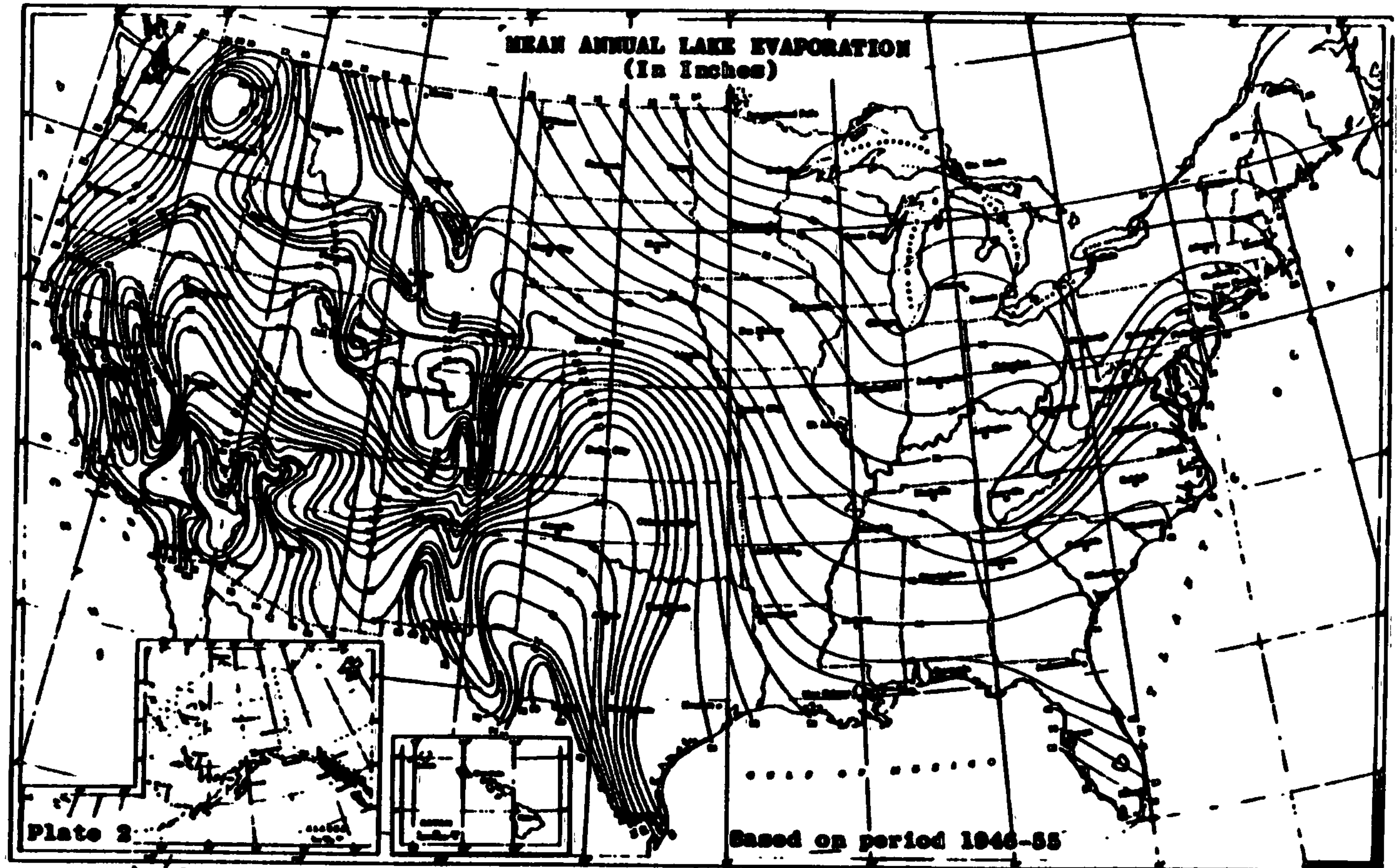
C. Waste Piles

	Assigned Value
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3

D. Landfill

	Assigned Value
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3

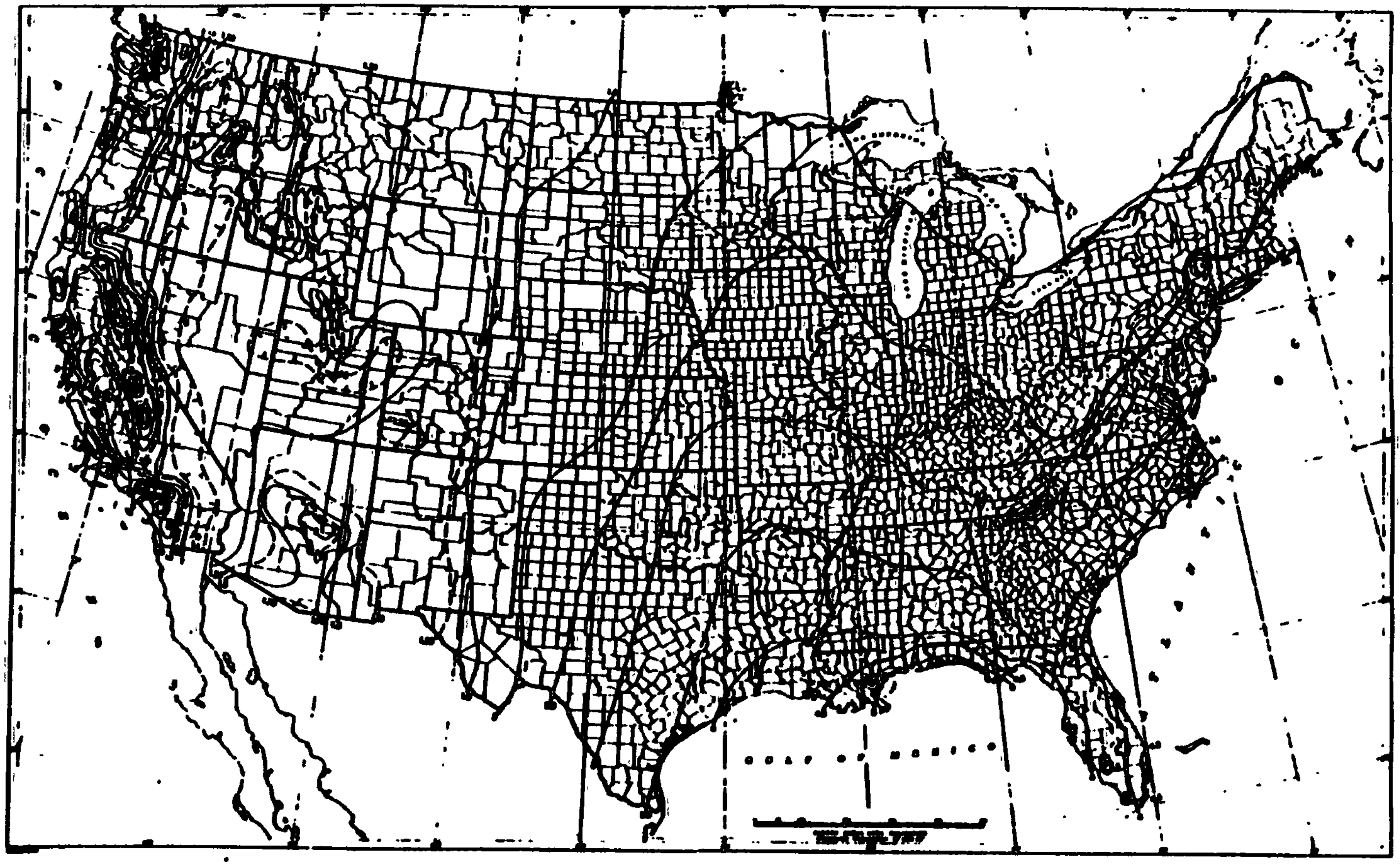
6



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

FIGURE 4
MEAN ANNUAL LAKE EVAPORATION
(IN INCHES)

3



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

FIGURE 8
1-YEAR 24-HOUR RAINFALL
(INCHES)

Ground Water Use (continued)	Assigned Value
Drinking water with municipal water from alternate unthreatened sources presently available (i.e., minimal hookup requirements); or commercial, industrial or irrigation with no other water source presently available	2
Drinking water; no municipal water from alternate unthreatened sources presently available	3

Distance to nearest well and population served have been combined in the matrix below to better reflect the important relationship between the distance of a population from hazardous substances and the size of the population served by ground water that might be contaminated by those substances. To determine the overall value for this combined factor, score each individually as discussed below. Match the individual values assigned with the values in the matrix for the total score.

Value for Population Served	Value for Distance to Nearest Well				
	0	1	2	3	4
0	0	0	0	0	0
1	0	4	6	8	10
2	0	8	12	16	20
3	0	12	18	24	30
4	0	16	24	32	35
5	0	20	30	35	40

Distance to nearest well is measured from the hazardous substance (not the facility boundary) to the nearest well that draws water from the aquifer of concern. If the actual distance to the nearest well is unknown, use the distance between the hazardous substance and the nearest occupied building not served by a public water supply (e.g., a farmhouse). If a discontinuity in the aquifer occurs between the hazardous substance and all wells, give this factor a score of 0, except where it can be shown that the contaminant is likely to migrate beyond the discontinuity. Figure 6 illustrates how the distance should be measured. Assign a value using the following guidance:

Distance	Greater than 3 miles	2 to 3 miles	1 to 2 miles	2001 feet to 1 mile	less than 2000 feet
Value	0	1	2	3	4

Population served by ground water is an indicator of the population at risk, which includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses, or trains. If aerial photography is used, and residents are known to use ground water, assume each dwelling unit has 3.8 residents. Where ground water is used for irrigation, convert to population by assuming 1.5 persons per acre of irrigated land. The well or wells of concern must be within three miles of the hazardous substances, including the area of known aquifer contamination, but the "population served" need not be. Likewise, people within three miles who do not use water from the aquifer of concern are not to be counted. Assign a value as follows:

3

Population	Assigned Value
0	0
1-100	1
101-1,000	2
1,001-3,000	3
3,001-10,000	4
>10,000	5

REF. 4

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger

VNR VAN NOSTRAND REINHOLD COMPANY

New York

Disaster Hazard: Dangerous; shock will explode it; when heated, burns and emits acrid fumes; can react on contact with oxidizing materials.

NAPHTHA, COAL TAR

CAS RN: 8030306 NIOSH #: QI 9450000

Dark straw-colored to colorless liquid. Sol in benzene, toluene, xylene, etc. bp: 149°-216°, flash p: 107°F (CC), d: 0.862-0.892, autoign. temp.: 531°F.

SYNS:

BENZIN	NAPHTHA
160 DEGREE BENZOL	NAPHTHA, PETROLEUM
COAL TAR NAPHTHA DISTILLATE	PETROLEUM BENZIN
LIGHT LIGROIN	PETROLEUM NAPHTHA
NAFTA (POLISH)	

TOXICITY DATA: 2	CODEN:
ihl-rat LCLo:1600 ppm/6H	CHINAG 17,1078,39

TLV: Air: 300 ppm DTLVS* 4,433,80. OSHA Standard: Air: TWA 100 ppm (SCP-G) FEREAC 39,23540,74. "NIOSH Manual of Analytical Methods" VOL 2 S86. Reported in EPA TSCA Inventory, 1980.
THR: MOD via inhal route. Can cause unconsciousness which may go to coma, stentorious breathing and bluish tint to the skin. Recovery follows removal from exposure. In mild form, intoxication resembles drunkenness. On a chronic basis no true poisoning; sometimes headache, lack of appetite, dizziness, sleeplessness, indigestion and nausea. A common air contaminant. See oils, mineral.
Fire Hazard: Mod, when exposed to heat or flame; can react with oxidizing materials. Keep containers tightly closed.
Explosion Hazard: Slight.
To Fight Fire: Foam, CO_2, dry chemical.

alpha-NAPHTHAL

CAS RN: 66773 NIOSH #: QJ 0175000

TOXICITY DATA: 3	CODEN:
scu-dog LDLo:330 mg/kg	ZMWIAJ 19,545,1881

Reported in EPA TSCA Inventory, 1980.
THR: HIGH scu.

NAPHTHALENE

CAS RN: 91203 NIOSH #: QJ 0525000
mf: $C_{10}H_8$; mw: 128.18

Aromatic odor, white, crystalline, volatile flakes. mp: 80.1°, bp: 217.9°, flash p: 174°F (OC), d: 1.162, lel = 0.9%, uel = 5.9%, vap. press: 1 mm @ 52.6°, vap. d: 4.42. Autoign temp: 1053°F (567°C); sol in alc, benzene. Insol in water; very sol in ether, CCl_4, CS_2 hydronaphthalenes, in fixed and volatile oils.

SYNS:

CAMPHOR TAR	NAPHTHENE
MOTH BALLS	NCI-C52904
MOTH FLAKES	TAR CAMPHOR
NAFTALEN (POLISH)	WHITE TAR
NAPHTHALINE	

TOXICITY DATA: 3	CODEN:
ipr-rat TDLo:5925 mg/kg (1-15D preg)	TXAPA9 48,A35,79
skn-rbt 495 mg open MLD	UCDS** 1/11/68
eye-rbt 100 mg MLD	BIOFX* 16-4/70
scu-rat TDLo:3500 mg/kg/12W-I:ETA	APAVAY 329,141,56
orl-chd LDLo:100 mg/kg	28ZRAQ -,228,60
unk-man LDLo:74 mg/kg	85DCAI 2,73,70
orl-rat LD50:1780 mg/kg	BIOFX* 16-4/70
ipr-mus LD50:150 mg/kg	NTIS** AD691-490
scu-mus LD50:969 mg/kg	TOIZAG 20(5/6),772,73
ivn-mus LD50:100 mg/kg	CSLNX* NX#00203
orl-dog LDLo:400 mg/kg	HBAMAK 4,1289,35
orl-cat LDLo:1000 mg/kg	HBAMAK 4,1289,35
orl-rbt LDLo:3 gm/kg	HBAMAK 4,1289,35
orl-mam LD50:1000 mg/kg	FMCHA2 -,D213,80

Aquatic Toxicity Rating: TLm96:10-1 ppm WQCHM* 3,-,74. *TLV:* Air: 10 ppm DTLVS* 4,293,80. *Toxicology Review:* 38ZNAA 1(1),93,71; JOPDAB 59,1,61; 27ZTAP 3,30,69. OSHA Standard: Air: TWA 10 ppm (SCP-T) FEREAC 39,23540,74. DOT-ORM-A, Label: None FEREAC 41,57018,76. Currently Tested by NTR for Carcinogenesis by Standard Bioassay Protocol as of Sept 1980. "NIOSH Manual of Analytical Methods" VOL 3 S292. Reported in EPA TSCA Inventory, 1980.
THR: MOD orl and HIGH ipr, ivn. An exper ETA. May be used as an insecticide. Systemic reactions include nausea, headache, diaphoresis, hematuria, fever, anemia, liver damage, vomiting, convulsions and coma. Poisoning may occur by ing of large doses, inhal or skn absorption.
Fire Hazard: Mod, when exposed to heat or flame; reacts with oxidizing materials. Reacts violently with CrO_3.
Spontaneous Heating: No.
Explosion Hazard: Mod, in the form of dust, when exposed to heat or flame.
To Fight Fire: Water, CO_2, dry chemical.
Incomp: Dinitrogen pentaoxide.

1-NAPHTHALENEACETAMIDE

CAS RN: 86862 NIOSH #: QJ 0590000
mf: $C_{12}H_{11}NO$; mw: 185.24

SYNS:

NAPHTHALENE ACETAMIDE	ALPHA-NAPHTHYLACETAMIDE
ALPHA-NAPHTHALENEACETAMIDE	1-NAPHTHYLACETAMIDE

TOXICITY DATA: 2	CODEN:
orl-mam LD50:1000 mg/kg	FMCHA2 -,D143,75

Reported in EPA TSCA Inventory, 1980.
THR: MOD orl.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

1-NAPTHTALENEACETIC ACID

CAS RN: 86873 NIOSH #: QJ 0875000
mf: $C_{12}H_{10}O_2$; mw: 186.22

(4)

TOXICITY DATA: 1 CODEN:
mma-sat 6 mmol/L/2H CNREA8 39,4152,79
orl-rat LDLo:5000 mg/kg 28ZRAQ -,55,60

Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.
THR: MUT data. LOW orl. See also 2-methyl naphthalene.
Fire Hazard: Mod, via heat, flames, oxidizers.
To Fight Fire: Dry chemical, CO_2, water spray or mist, foam.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYLNAPHTHALENE

CAS RN: 91576 NIOSH #: QJ 9635000
mf: $C_{11}H_{10}$; mw: 142.21

Solid, insol in water, sol in alc and ether. d: 1.0058 @ 20°/4°, bp: 241.1°, mp: 34.58°.

SYN: BETA-METHYLNAPHTHALENE

TOXICITY DATA: 1 CODEN:
orl-rat LDLo:5000 mg/kg 28ZRAQ -,55,60

Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80
THR: LOW orl.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYL-1,4-NAPHTHALENEDIOL

CAS RN: 481856 NIOSH #: QJ 5075000
mf: $C_{11}H_{10}O_2$; mw: 174.21

SYNS:
METHYLNAPHTHOHYDROQUINONE
2-METHYL-1,4-NAPHTHOHYDROQUINONE
2-METHYL-1,4-NAPHTHOQUINOL

TOXICITY DATA: 3 CODEN:
orl-mus LD50:30 mg/kg JPETAB 75,111,42
ipr-mus LDLo:400 mg/kg CRSBAW 143,585,49

THR: HIGH orl, ipr.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYL-1,4-NAPHTHALENEDIOL DIBUTYRATE

CAS RN: 53370448 NIOSH #: QJ 5255000
mf: $C_{19}H_{22}O_4$; mw: 314.41

SYNS:
2-METHYL-1,4-NAPHTHOHYDROCHINON-DIBUTYRAT (GERMAN)
VITAMIN K4-DIBUTYRAT (GERMAN)

TOXICITY DATA: 2-1 CODEN:
orl-mus LD50:12 gm/kg ARZNAD 17,1339,67
ipr-mus LD50:1 gm/kg ARZNAD 17,1339,67

THR: MOD ipr; LOW orl.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

P-METHYL-N-(1-NAPHTHALENYLOXY) PHOSPHONAMIDOTHIOIC ACID-O-ETHYL ESTER

CAS RN: 63815532 NIOSH #: SZ 6260000
mf: $C_{13}H_{16}NO_2PS$; mw: 281.33

SYN: BAY 39197

TOXICITY DATA: 3 CODEN:
orl-rat LD50:250 mg/kg TXAPA9 21,315,72
orl-bwd LD50:18 mg/kg TXAPA9 21,315,72

THR: HIGH orl.
Disaster Hazard: When heated to decomp it emits very tox fumes of SO_x, PO_x and NO_x.

5-METHYLNAPHTHO(1,2,3,4-def)CHRYSENE

CAS RN: 2869092 NIOSH #: QL 0350000
mf: $C_{25}H_{16}$; mw: 316.41

SYN: 2'-METHYL-1,2:4,5-DIBENZOPYRENE

TOXICITY DATA: 3 CODEN:
scu-mus TDLo:72 mg/kg/9W-I:ETA COREAF 259,3899,64

THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

6-METHYLNAPHTHO(1,2,3,4-def)CHRYSENE

CAS RN: 2869105 NIOSH #: QL 0525000
mf: $C_{25}H_{16}$; mw: 316.41

SYN: 3'-METHYL-1,2:4,5-DIBENZOPYRENE

TOXICITY DATA: 3 CODEN:
scu-mus TDLo:72 mg/kg/9W-I:ETA COREAF 259,3899,64

THR: An exper ETA.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

2-METHYL-1,4-NAPHTHOQUINONE

CAS RN: 58275 NIOSH #: QL 9100000
mf: $C_{11}H_8O_2$; mw: 172.19

SYNS:
KIPCA, OIL SOLUBLE
2-METHYL-1,4-NAPHTHOCHINON (GERMAN)
3-METHYL-1,4-NAPHTHOQUINONE
THYLOQUINONE
USAF EK-5185
VITAMIN K3

TOXICITY DATA: 3 CODEN:
mmo-sat 4 ug/plate ABCHA 6,45,327,81
mmo-omi-6 ppm POASAD 34,114,53
mma-sat 30 nmol/plate BBRCA9 94,737,80
skn-mus TDLo:1860 mg/kg/27W-I:ETA BJCAAI 7,482,53
skn-mus TD:8400 mg/kg/21W-I:ETA CNREA8 19,413,59
ipr-rat LD50:75 mg/kg TXAPA9 18,185,71
ivn-rat LD50:800 mg/kg ARZNAD 18,678,68

BENZEDRINE SULFATE

CAS RN: 156310 NIOSH #: SI 1225000
mf: $C_{18}H_{26}N_2 \cdot H_2O_4S$; mw: 368.54

SYNS:
PHENETHYLAMINE, ALPHA-METHYL-, SULFATE (2:1)
DIAMPHETAMINE SULFATE
DL-ALPHA-METHYLPHENETHYLAMINE SULFATE
1-PHENYL-2-AMINOPROPANE SULFATE

TOXICITY DATA: 3	CODEN:
ipr-rat LDLo:25 mg/kg	JPETAB 100,267,50
scu-rat LDLo:10 mg/kg	JPETAB 71,62,41
scu-mus LD50:14 mg/kg	JPETAB 87,214,46
ipr-gpg LDLo:50 mg/kg	JPETAB 100,267,50

THR: HIGH ipr, scu. See also sulfates.
Disaster Hazard: When heated to decomp it emits very tox fumes of SO_x and NO_x.

D-BENZEDRINE SULFATE

CAS RN: 51638 NIOSH #: SI 1400000
mf: $C_{18}H_{26}N_2 \cdot H_2O_4S$; mw: 368.54

SYNS:
AMPHEDRINE
AMPHEREX
(+)-AMPHETAMINE SULFATE
D-AMPHETAMINE SULFATE
DEXAMPHETAMINE SULFATE
DEXAMYL
DEXEDRINA
DEXEDRINE SULFATE
DEXIES
D-ALPHA-METHYLPHENETHYLAMINE SULFATE
OBESEDRIN
FASTBALLS
HEARTS
DEXTROAMPHETAMINE SULFATE
DEXTRO-ALPHA-METHYLPHENETHYLAMINE SULFATE
ORANGES
PHENEDRINE
PHENOPROMIN
D-1-PHENYL-2-AMINOPROPANE SULFATE
DEXTRO-1-PHENYL-2-AMINOPROPANE SULFATE
D-BETA-PHENYLISOPROPYLAMINE SULFATE
DEXTRO-BETA-PHENYLISOPROPYLAMINE SULFATE

TOXICITY DATA: 3	CODEN:
ipr-mus TDLo:50 mg/kg/(8D preg):TER	TJADAB 1,413,68
unk-mus TDLo:50 mg/kg/(8D preg):TER	TJADAB 1,413,68
orl-rat LD50:38 mg/kg	JOPDAB 69,663,66
ipr-rat LD50:70 mg/kg	TXAPA9 45(1),49,78
scu-rat LD50:200 mg/kg	12VXA5 8,335,68
ivn-rat LD50:30 mg/kg	JPETAB 110,180,54
orl-mus LD50:33 mg/kg	TXAPA9 21,302,72
ipr-mus LD50:72 mg/kg	JPETAB 128,176,60
scu-mus LD50:16 mg/kg	AIPTAK 184,34,70
ivn-mus LD50:30 mg/kg	JPETAB 137,365,62
orl-dog LD50:10 mg/kg	PSEBAA 118,557,65
ivn-dog LD50:3 mg/kg	PSEBAA 118,557,65
ivn-rbt LD50:10 mg/kg	JPETAB 110,180,54

Toxicology Review: ISYAM* -,343,70; 27ZTAP 3,46,69.
THR: An exper TER. HIGH orl, ipr, scu, ivn. A habit-forming stimulant. See also sulfates.
Disaster Hazard: When heated to decomp it emits very tox fumes of SO_x and NO_x.

L-BENZEDRINE SULFATE

CAS RN: 51627 NIOSH #: SI 1575000
mf: $C_{18}H_{26}N_2 \cdot H_2O_4S$; mw: 368.54

SYNS:
(-)-AMPHETAMINE SULFATE
L-AMPHETAMINE SULFATE
LEVEDRINE
L-1-PHENYL-2-AMINOPROPANE SULFATE

TOXICITY DATA: 3	CODEN:
scu-rat LDLo:160 mg/kg	JPETAB 71,62,41
ipr-mus LD50:232 mg/kg	JPETAB 158,135,67

THR: HIGH scu, ipr. See also sulfates.
Disaster Hazard: When heated to decomp it emits very tox fumes of SO_x and NO_x.

BENZENAMINE HYDROCHLORIDE

CAS RN: 142041 NIOSH #: CY 0875000
mf: $C_6H_7N \cdot ClH$; mw: 129.60

Crystals. vap. d: 4.46, d: 1.22, mp: 198°, bp: 245°, flash p: 380°F (OC).

SYNS:
ANILINE HYDROCHLORIDE
"ANILINE SALT"
CHLORHYDRATE D'ANILINE (FRENCH)
CHLORID ANILINU (CZECH)
NCI-C03736
USAF EK-442

TOXICITY DATA: 3	CODEN:
skn-rbt 500 mg/24H MOD	28ZPAK -,65,72
eye-rbt 20 mg/24H SEV	28ZPAK -,65,72
orl-rat TDLo:130 gm/kg/2Y-C:CARC	NCITR* NCI-CG-TR-130,78
orl-rat TD:238 gm/kg/2Y-C:CARC	NCITR* NCI-CG-TR-130,78
orl-rat LD50:1072 mg/kg	NTIS** PB214-270
ipr-rat LDLo:500 mg/kg	NCNSA6 5,11,53
orl-mus LD50:841 mg/kg	NTIS** PB214-270
ipr-mus LD50:300 mg/kg	NTIS** AD277-689
orl-rat TD:137 gm/kg/60W-C:ETA	IARC** 27,39,82
orl-rat TD:2163 gm/kg/2Y-C:CAR	IARC** 27,39,82
orl-rat TD:4326 gm/kg/2Y-C:CAR	IARC** 27,39,82

Aquatic Toxicity Rating: TLm96:100-10 ppm WQCHM* 2,-,74. NCI Carcinogenesis Bioassay Completed; Results Positive: Rat (NCITR* NCI-CG-TR-130,78). NCI Carcinogenesis Bioassay Completed; Results Negative: Mouse (NCITR* NCI-CG-TR-130,78). Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.
THR: An exper CARC. HIGH ipr; MOD orl, ipr. MOD skn irr, SEV eye irr in rbt. See also aniline.
Fire Hazard: Slight, when exposed to heat or flame.
Spontaneous Heating: No.
Disaster Hazard: Dangerous; when heated to decomp, or on contact with acid or acid fumes, emits highly toxic fumes of aniline and chlorine compounds; can react vigorously with oxidizing materials.
To Fight Fire: Water, CO_2, water mist or spray, dry chemical.

BENZENE

CAS RN: 71432 NIOSH #: CY 1400000
mf: C_6H_6; mw: 78.12

Clear colorless liquid. mp: 5.51°, bp: 80.093°-80.094°, flash p: 12°F (CC), d: 0.8794 @ 20°, autoign. temp.: 1044°F, lel: 1.4%, uel: 8.0%, vap. press: 100 mm @ 26.1°, vap. d: 2.77, ulc: 95-100.

SYNS:

(6)ANNULENE	COAL NAPHTHA
BENZEEN (DUTCH)	CYCLOHEXATRIENE
BENZEN (POLISH)	FENZEN (CZECH)
BENZOL	MINERAL NAPHTHA
BENZOLENE	MOTOR BENZOL
BENZOLO (ITALIAN)	NCI-C55276
BICARBURET OF HYDROGEN	PHENYL HYDRIDE
CARBON OIL	PYROBENZOLE

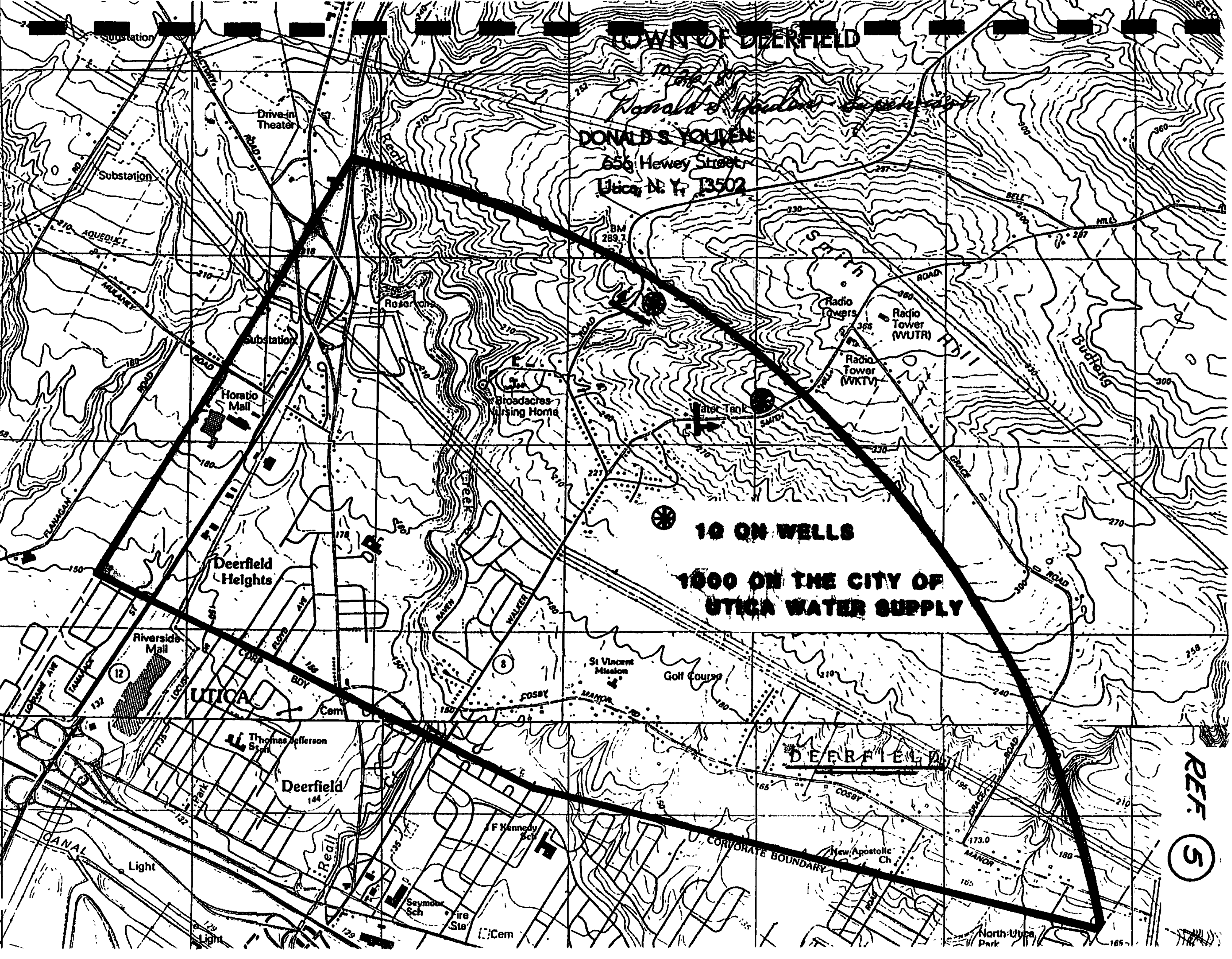
TOXICITY DATA: 3	CODEN:
skn-rbt 15 mg/24H open MLD	AIHAAP 23,95,62
eye-rbt 88 mg MOD	AMIHAB 14,387,56
eye-rbt 2 mg/24H SEV	28ZPAK -,23,72
cyt-rat-scu 12 gm/kg/12D-I	GTPZAB 17(3),24,73
mnt-mus-ipr 500 uL/kg	ENMUDM 2,43,80
cyt-mus-orl 100 uL/kg	ENMUDM 2,43,80
cyt-mus-ipr 100 uL/kg	ENMUDM 2,43,80
dlt-mus-ipr 5 mg/kg	TPKVAL 15,30,79
cyt-rbt-scu 8400 mg/kg	PSDTAP 15,275,74
scu-mus TDLo:2700 mg/kg/(13D preg):TER	AMBNAS 17,285,70
ihl-hmn TCLo:100 ppm/10Y-I:CAR	TRBMAV 37,153,78
orl-rat TDLo:52 gm/kg/52W-I:CAR	MELAAD 70,352,79
skn-mus TDLo:1200 gm/kg/ 49W-I:NEO	BJCAAI 16,275,62
scu-mus TDLo:600 mg/kg/ 17W-I:ETA	KRANAW 9,403,32
par-mus TDLo:670 mg/kg/ 19W-I:ETA	KLWOAZ 12,109,33
ihl-hmn TC:400 ppm/8Y-I:ETA	BLOOAW 52,285,78
ihl-man TC:2100 mg/m3/4Y-I:CAR	NEJMAG 271,872,64
orl-rat TD:10 gm/kg/52W-I:CAR	MELAAD 70,352,79
orl-hmn TDLo:130 mg/kg:CNS	AHYGAJ 31,336,1897
ihl-hmn LCLo:20000 ppm/5M	29ZUA8 -,-,53
ihl-hmn TCLo:210 ppm:BLD	27ZXA3 -,341,63
ihl-rat TCLo:670 mg/m3/24H (15D pre/1-22D preg)	HYSAAV 33,327,68
ihl-rat TCLo:56600 ug/m3/24H (1-22D preg)	HYSAAV 33,112,68
ihl-rat TCLO:50 ppm/24H (7-14D preg)	JHEMA2 24,363,80
ihl-rat TCLO:150 ppm/24H (7-14D preg)	JHEMA2 24,363,80
scu-mus TDLo:1100 mg/kg (12D preg)	TOXID9 1,125,81
scu-mus TDLo:2700 mg/kg/(13D preg) TFX:TER	AMBNAS 17,285,70
orl-mus TDLo:9 gm/kg (6-15D preg)	TJADAB 19,41A,79
orl-mus TDLo:12 gm/kg (6-15D preg)	TJADAB 19,41A,79
orl-rat TD:10 gm/kg/52W-I TFX:CAR	MELAAD 70,352,79
ihl-hmn TCLo:100 ppm:CNS	INMEAF 17,199,48
unk-man LDLo:194 mg/kg	85DCAI 2,73,70
orl-rat LD50:3800 mg/kg	TXAPA9 19,699,71
ihl-rat LC50:10000 ppm/7H	28ZRAQ -,113,60
ipr-rat LDLo:1150 mg/kg	TXAPA9 1,156,59
orl-mus LD50:4700 mg/kg	HYSAAV 32,349,67
ihl-mus LC50:9980 ppm	JIHTAB 25,366,43
ipr-mus LD50:990 ug/kg	AGGHAR 18,109,60
orl-dog LDLo:2000 mg/kg	HBAMAK 4,1313,35
ihl-dog LCLo:146000 mg/m3	HBTXAC 1,324,56
ihl-cat LCLo:170000 mg/m3	HBTXAC 1,324,56
ivn-rbt LDLo:88 mg/kg	JTEHD6 -(Suppl.2),45,77
ipr-gpg LDLo:527 mg/kg	HBTXAC 1,42,56
scu-frg LDLo:1400 mg/kg	HBAMAK 4,1313,35
ihl-mam LCLo:20000 ppm/5M	AEPPAE 138,65,28

Aquatic Toxicity Rating: TLm96:100-10 ppm WQCHM* 2,-,74. Carcinogenic Determination: Human Suspected IARC** 7,203,74.

TLV: Air: 10 ppm DTLVS* 4,37,80. *Toxicology Review:* ARPAAQ 11,434,31; EVHPAZ 11,163,75; AEHLAU 22,373,71; PAREAQ 4,1,52; FNSCA6 2,67,73; MUREAV 47(2),75,78; AMSVAZ 118,354,44; ZHPMAT 166,113,78; JTEHD6 -(suppl.2),69,77; PHRPA6 41,1357,26; CTOXAO 11,531,77; BNYMAM 54, 413,78; KRANAW 9,403,32; 27ZTAP 3,22,69. OSHA Standard: Air: TWA 10 ppm; CL 25 ppm; Pk 50 ppm/10M/8H (SCP-U) FEREAC 39,23540,74. DOT: Flammable Liquid, Label: Flammable Liquid FEREAC 41,57018,76. Occupational Exposure to Benzene recm std: Air: CL 10 ppm/60M NTIS**. Currently Tested by NTP for Carcinogenesis by Standard Bioassay Protocol as of December 1980. "NIOSH Manual of Analytical Methods" VOL 1 127, VOL 3 S311. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8E NO:12770027-Followup Sent as of April, 1979.

THR: Poisoning occurs most commonly through inhal of the vapor, though benzene can penetrate the skin, and poison in that way. Locally, benzene has a comparatively strong irr effect, producing erythema and burning, and, in more severe cases, edema and even blistering. Exposure to high conc of the vapor (3000 ppm or higher) may result from failure of equipment or spillage. Such exposure, while rare in industry, may result in acute poisoning, characterized by the narcotic action of benzene on the CNS. The anesthetic action of benzene is similar to that of other anesthetic gases, consisting of a preliminary stage of excitation followed by depression and, if exposure is continued, death through respiratory failure. The chronic, rather than the acute form, of benzene poisoning is important in industry. It is a recog leukemogen. There is no specific blood picture occurring in cases of chronic benzol poisoning. The bone marrow may be hypoplastic, normal, or hyperplastic, the changes reflected in the peripheral blood. Anemia, leucopenia, macrocytosis, reticulocytosis, thromocytopenia, high color index, and prolonged bleeding time may be present. Cases of myeloid leukemia have been reported. For the supervision of the worker, repeated blood examinations are necessary, including hemoglobin determinations, white and red cell counts and differential smears. Where a worker shows a progressive drop in either red or white cells, or where the white count remains below 5,000 per cu mm or the red count below 4.0 million per cu mm, on two successive monthly examinations, he should be immediately removed from exposure. Following absorption of benzene, elimination is chiefly through the lungs, when fresh air is breathed. The portion that is absorbed is oxidized, and the oxidation products are combined with sulfuric and glycuronic acids and eliminated in the urine. This may be used as a diagnostic sign. Benzene has a definite cumulative action, and exposure to relatively high conc is not serious from the point of view of causing damage to the blood-forming system, provided the exposure is not repeated. On the other hand,

REF. 5


TOWN OF DEERFIELD
DONALD S. YOUDEN
636 Hewey Street
Utica, N.Y. 13502
10 ON WELLS
1000 ON THE CITY OF
UTICA WATER SUPPLY
Radio Towers
Radio Tower (WUTR)
Radio Tower (WKTV)
Water Tank
Smith Hill
Budlong
Broadacres Nursing Home
St Vincent Mission
Golf Course
DEERFIELD
CORPORATE BOUNDARY
New Apostolic Ch
North Utica Park
Deerfield Heights
Horatio Mall
Riverside Mall
UTICA
Deerfield
Thomas Jefferson Sch
F Kennedy Sch
Seymour Sch
Fire Sta
Cem
Drive-in Theater
Substation
Creek
CANAL
Light

REF. 6

URS

AN INTERNATIONAL PROFESSIONAL SERVICES ORGANIZATION

URS COMPANY, INC.
CONSULTING ENGINEERS
570 DELAWARE AVENUE
BUFFALO, NEW YORK 14202
TEL. (716) 883-5525

NEW YORK
MONTVALE, NJ
BUFFALO
ATLANTA
TAMPA
HATO REY PR
WASHINGTON DC
BOSTON
CLEVELAND
DENVER
DALLAS
SEATTLE
SAN FRANCISCO
SAN MATEO, CA

RECEIVED
URS COMPANY
SEP 17 1987

JOB #

September 10, 1987

Mr. Russell Logalbo
Utica Board of Water Supply
Box 345
Utica, New York 13503

Dear Mr. Logalbo:

As I mentioned during our telephone conversation on September 8, 1987, URS Company, Inc. is currently conducting a Phase I investigation of the following sites within the City of Utica:

- Monarch Chemical Company, 37 Meadow Street
- N.Y. Emulsion Tar Products, Washington Street
- Mohawk Valley Oil Corporation, Lee Street

We are performing this investigation for the New York State Department of Environmental Conservation pursuant to the requirements of the New York State Superfund Law (Chapter 857 of the Laws of 1982).

This is to confirm our telephone conversation wherein you provided the following information:

o The source of water for the Utica Board of Water Supply is Hinkley Reservoir which is located approximately 16 miles northeast of the sites.

o The Utica Board of Water Supply is the sole water supplier for the area within 3 miles of the sites. This includes portions of the Villages of Yorkville, Whitesboro, New York Mills and New Hartford and the Towns of New Hartford, Whitestown, Marcy and Deerfield.

We would appreciate if you would review this information, note any necessary corrections, and return a signed and dated copy to indicate your concurrence. Your prompt attention to this would be appreciated, as the information is necessary to complete our evaluation of the site. Thank you for your cooperation.

Sincerely,

Muffett A. Mauche

Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC
for Linda J. Clark, Project Geologist, URS Company, Inc.

MAM/bc
9/10/87L
35154/B3

I agree with the information as it is presented.

Russell Logalbo
Mr. Russell Logalbo

Sept 14 1987
Date

REF 6A

TOWN OF MARCY

P.O. Box 251 — 9455 Toby Road
Marcy, New York 13403

November 12, 1987

URS Corporation
570 Delaware Avenue
Buffalo, New York 14202-1207

Attention: Muffett A. Mauche
Staff Engineer

Gentlemen:

Enclosed please find the information requested for your Phase I investigation.

Yours truly,

Karl P. Maxwell

Karl P. Maxwell
Supervisor

KPM:ccm
Enclosure

RECEIVED
URS COMPANY

NOV 13 1987

JOB #

6A

URS

AN INTERNATIONAL PROFESSIONAL SERVICES ORGANIZATION

URS CORPORATION
570 DELAWARE AVENUE
BUFFALO NEW YORK 14202-1207
(716) 883-5525

ATLANTA
BOSTON
BUFFALO
CLEVELAND
COLUMBUS
NEW YORK
PARAMUS NJ
SAN ANTONIO
SAN FRANCISCO
SAN MATEO
SEATTLE
WASHINGTON DC

September 15, 1987

Mr. Karl Maxwell, Town Supervisor
Box 338, Routh 291
Marcy,N.Y. 13403

Dear Mr. Maxwell:

As I mentioned during a telephone conversation with Ms. Cindy Cochi on September 15, 1987, URS Company, Inc. is currently conducting a Phase I investigation of the following sites within the City of Utica:

- Monarch Chemical Company, 37 Meadow Street
- N.Y. Emulsion Tar Products, Washington Street
- Mohawk Valley Oil Corporation, Lee Street

We are performing this investigation for the New York State Department of Environmental Conservation pursuant to the requirements of the New York State Superfund Law (Chapter 867 of the Laws of 1982).

In order to complete a Hazard Ranking System (HRS) evaluation, we request the following information for the portion of the 3-mile radius study area which lies within the Town of Marcy:

- o Any community water systems (surface water or ground water, municipal or non-municipal) NO

- o The number (or approximated number) of private wells used as a sole source of water, or the number of buildings not on public water. 75-100

- o Is there a municipal system readily available to the above? (Requires only a line to the street) yes

The portion of the Town of Marcy which lies within the 3-mile radius study area has been located on a road map and the appropriate USGS 7.5 minute quadrangle. If you have any questions, please contact me. Your prompt attention to this would be appreciated as the information is necessary to complete our evaluation of the sites. Your assistance is greatly appreciated.

Sincerely,

Muffett A. Mauche

Muffett A. Mauche, Staff Engineer, LeRoy Callender PC
for Linda J. Clark, Project Geologist, URS Company, Inc.

MAM/mb
35154

REF. 7

United States Department of Agriculture

Soil Conservation Service
RR#1, Box 126-C, Second St. Oriskany, N.Y. 13424

Muffett A. Mauche, Staff Engineer
URS Company, Inc.
570 Delaware Avenue
Buffalo, New York 14202-1207

September 14, 1987

Dear Ms. Mauche:

The following is information that you have requested for HRS evaluation on three sites in Oneida County.

1) N.Y. Emulsion Tar Products, Washington Street, City of Utica
2) Monarch Chemical Company, 37 Meadow Street, City of Utica
3) Mohawk Valley Oil Corporation, Lee Street, City of Utica

* No irrigation of Agricultural crops within a 3 mile radius.
* Agricultural land in production less than a mile - None
* Distance to Prime Land - - greater than 2 miles.

Sincerely,

Robin Mangini

Robin Mangini
District Conservationist

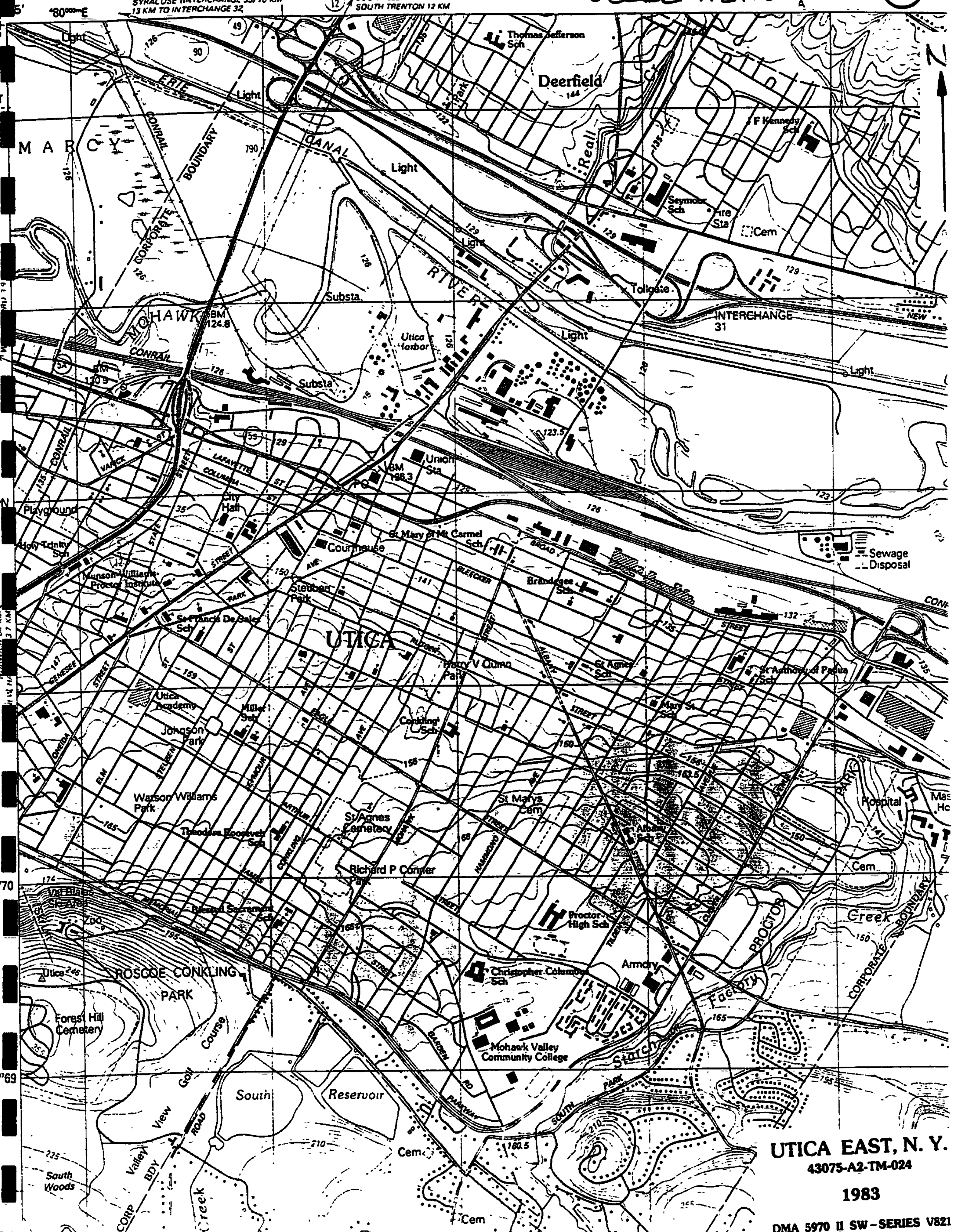
RECEIVED
URS COMPANY

SEP 17 1987

JOB # ____________

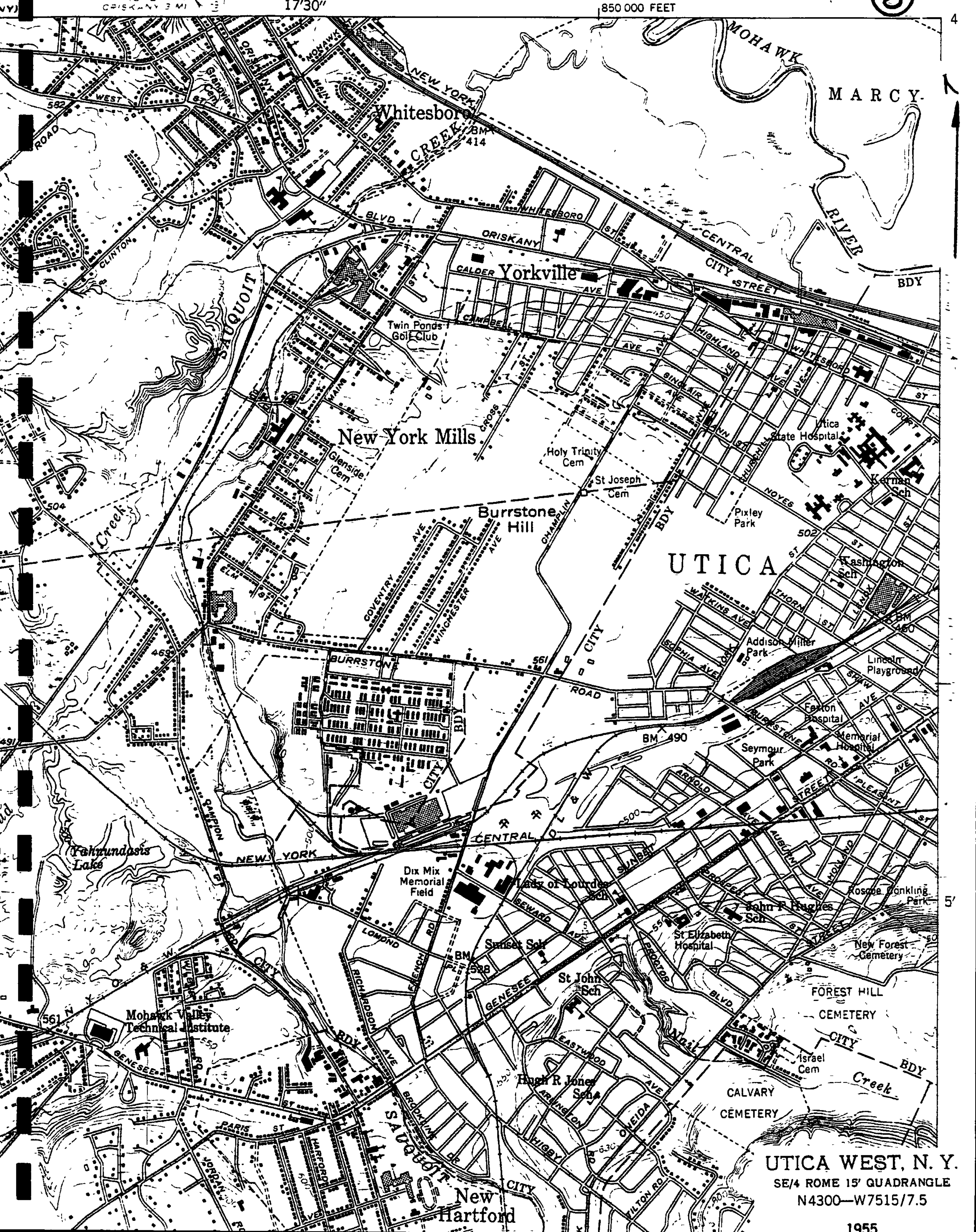
GEOLOGICAL SURVEY

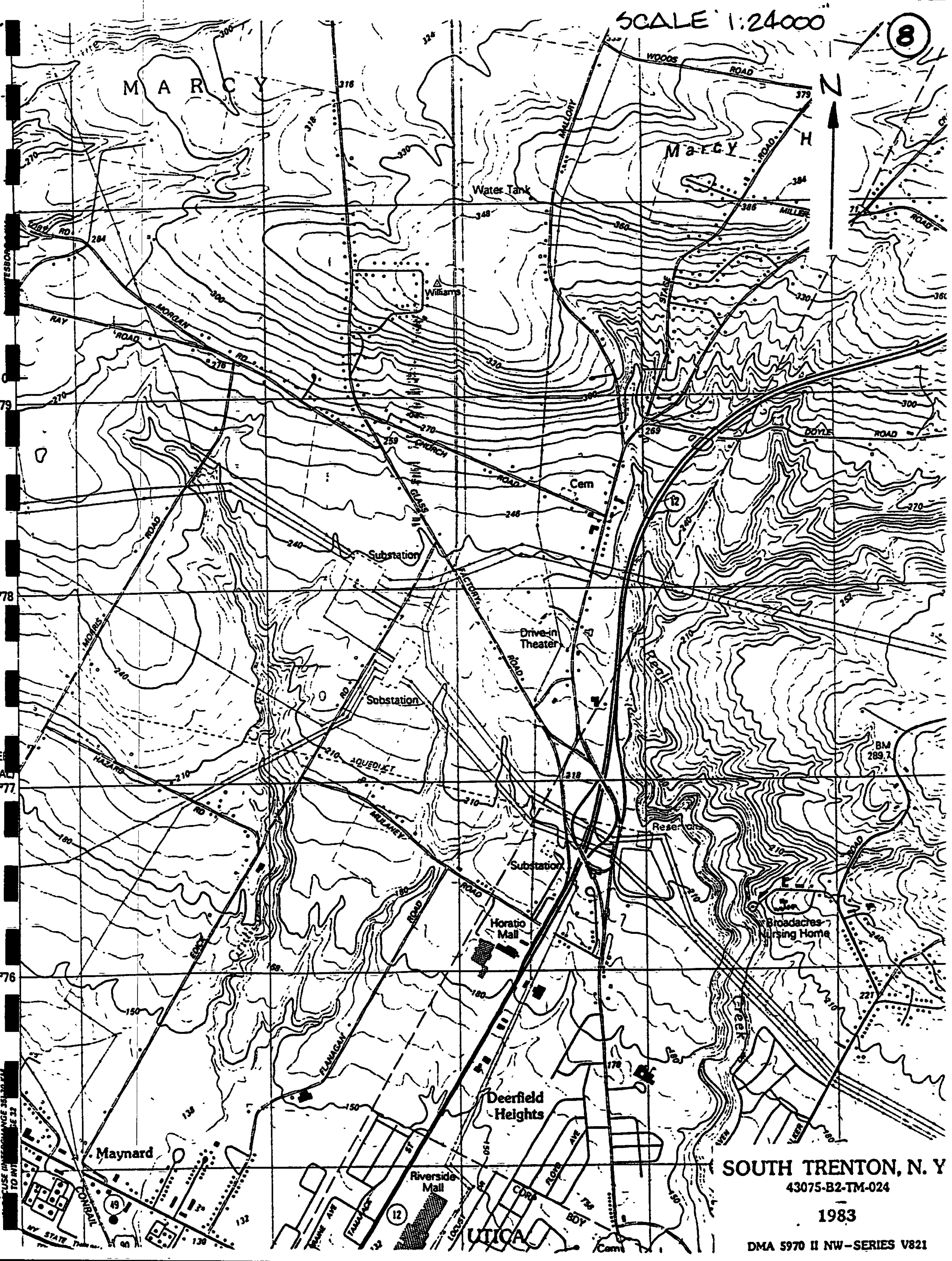
SCALE 1:24000 REF. 8



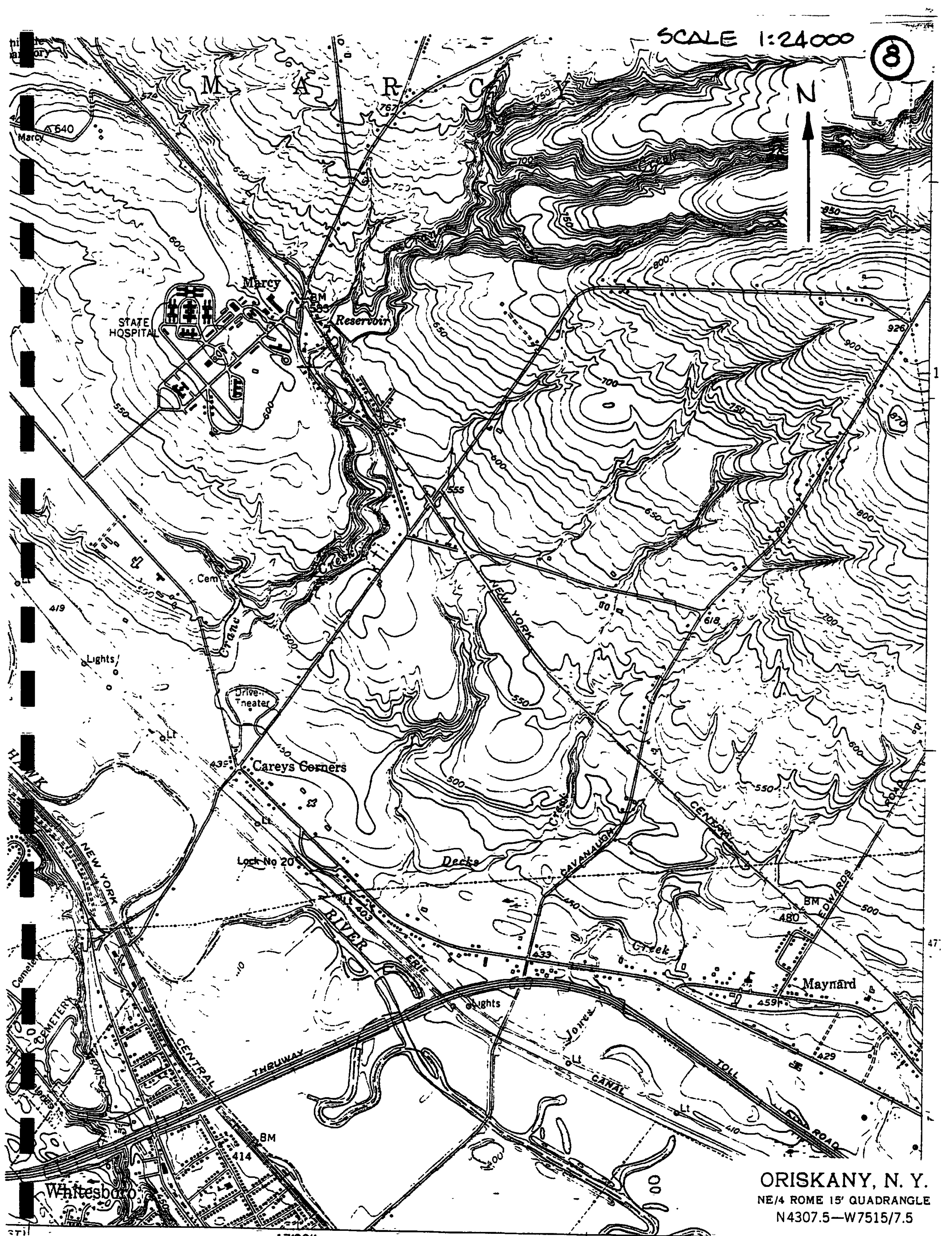
UTICA EAST, N. Y.
43075-A2-TM-024
1983
DMA 5970 II SW–SERIES V821

SCALE 1:24000 (8)



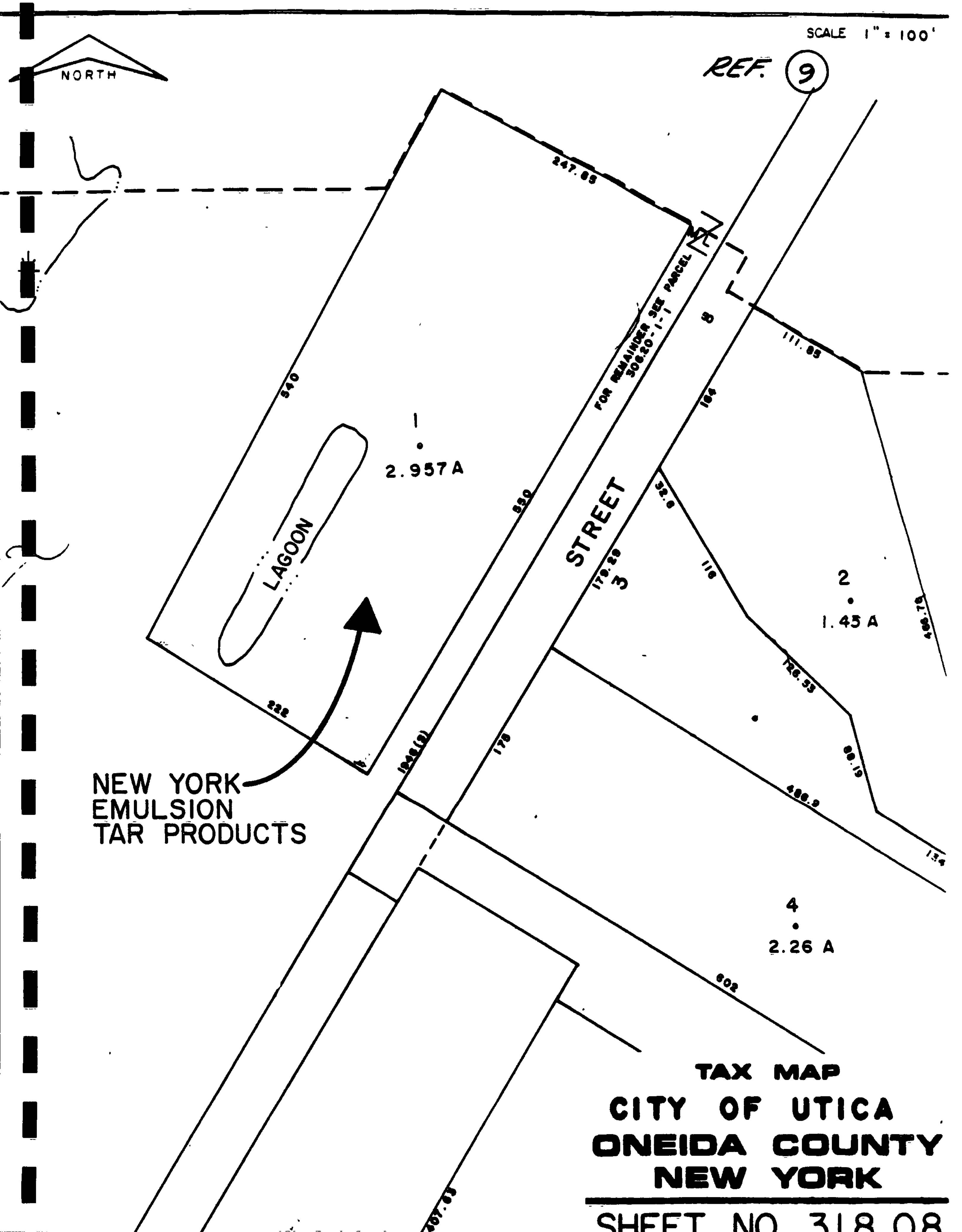


SCALE 1:24000
8
N
MARCY
Marcy
WOODS ROAD
MILLER
Water Tank
Williams
MORGAN RD
RAY ROAD
CHURCH ROAD
DOYLE ROAD
Cem
Substation
Drive-in Theater
VICTORY ROAD
MORRIS ROAD
HAZARD RD
AQUEDUCT
MULANEY ROAD
Substation
Substation
Reservoir
BM 289.7
Broadacres Nursing Home
Horatio Mall
FLANAGAN ROAD
Deerfield Heights
Maynard
CONRAIL
NY STATE Thruway
Riverside Mall
UTICA
CORP BDY
Creek
SOUTH TRENTON, N. Y
43075-B2-TM-024
1983
DMA 5970 II NW-SERIES V821



ORISKANY, N. Y.
NE/4 ROME 15' QUADRANGLE
N4307.5—W7515/7.5

1955



SCALE 1" = 100'
REF. 9
NORTH
247.85
FOR REMAINDER SEE PARCEL 306.20-1-1
111.85
540
1
2.957 A
LAGOON
550
STREET
3
179.29
164
32.6
118
2
1.45 A
126.53
88.19
486.9
228
178
NEW YORK
EMULSION
TAR PRODUCTS
4
2.26 A
602
TAX MAP
CITY OF UTICA
ONEIDA COUNTY
NEW YORK
SHEET NO 318.08

REF. 10
NORTH
SCALE 1" = 400
ONEIDA COUNTY
NEW YORK
SHEET NO. 318


10
NORTH
SCALE : 1" = 400'
ONEIDA COUNTY
NEW YORK
SHEET NO. 306

REF (11)

Suit-Kote Corporation

Doing business as Central Asphalt, Cortland Asphalt Products, New York Emulsions, Northern Asphalt, and Western Bituminous Products.

1911 Lorings Crossing Road
P.O. Box 5160
Cortland, N.Y. 13045-5160

RECEIVED
URS COMPANY
SEP 21 1987

September 16, 1987

Dan Rothman, P.E.
URS Company, Inc.
570 Delaware Ave.
Buffalo, NY 14202

JOB # ____________

Re: Letter of August 18, 1987
(NYE-Phase I Investigation)

Dear Dan:

To confirm our phone conversation, Rod Birdsall and I have gone over the 21 points of information and made a few changes for clarification. Rod has talked with Bob Hannan, and we are sending a copy of this letter to him.

(1) Koppers Company used to process material on-site. Tar Asphalt Service (the property across Washington Street which is now listed as being owned by Roselli Associates) would then pick up the tar material for use off-site.

(2) Koppers operated on-site from approximately 1926 until March, 1977. Koppers was in the tar and asphalt emulsion business, at the site, at the time of our purchase. Suit-Kote is in the emulsified asphalt business. Suit-Kote purchased the site and inventory from the Koppers Company in March, 1977.

(3) John Roselli purchased the Tar Asphalt Service property in 1977 and may be a possible source of information concerning on-site activities. This company may still be operating in the Utica area.

(4) At the time of the purchase, Suit-Kote acquired the property and all inventory at the site, including asphalt and road tar. Suit-Kote operated the asphalt emulsion plant until 1983, at which time it ceased operation of the emulsion plant. Suit-Kote sold the road tar that was in inventory but did not process road tar at the site. Asphalt is the residue of the distillation of crude oil and is petroleum based. Road tar is the residue of the coking process of coal.

(5) Some of the tanks on site had naphtha in them when Suit-Kote purchased the property from Koppers. Suit-Kote used the naphtha inventory in the production of asphalt emulsion and did not store naphtha after the inventory was processed.

(6) There is lots of cleanup to be done on-site as of this time. The tanks are empty except for the residue in some of the tanks. However, there is some loose asbestos insulation on at least one of the tanks, and possible PCB oil in several of the on-site transformers.

(7) Suit-Kote has a drawing of the site which shows the location of on-site tanks, etc., as well as the property dimensions.

11

(8) The on-site lagoon discharges to a manhole and then into the storm sewer system which is located on Washington Street. The lagoon was constructed by Koppers to comply with the spill prevention plan and countermeasure plan requirement for the facility.

(9) There are a number of drums located throughout the site. Most of these are empty.

(10) Suit-Kote produces no waste material in the emulsified asphalt production process. Everything goes into the product. Asphalt emulsions are a suspension of asphalt, emulsifiers, water and sometimes solvents.

(11) A SPEDES permit is still maintained by Suit-Kote to cover the discharge from the lagoon into the storm sewer system. The SPEDES permit was originally applied for, and held by, Koppers.

(12) In the emulsified asphalt production process, the basic input is a base asphalt, which is a very viscous, fairly solid material with a softening point of 120°+F.

(13) The on-site laboratory still has material within it. It is believed that Koppers used this laboratory extensively. Suit-Kote used it only as a quality control laboratory performing very simple physical tests on the produced material, such as viscosity, which did not require any exotic chemicals. The contents of the old laboratory are unknown.

(14) Suit-Kote emptied various tanks, after purchase of the property from Koppers, of inventory and used the material for various acceptable road building applications.

(15) Suit-Kote used only a portion of the facilities during its period of operation on the property. Primarily, Suit-Kote used facilities located towards Washington Street for the production of asphalt emulsions.

(16) The emulsified asphalt production process does not generate or use either benzene or naphthalene.

(17) Jim Cromie was a long-time employee for Koppers and became Plant Superintendent for Suit-Kote after the purchase in March, 1977. Koppers Company has offices located in Pittsburgh. Jim Cromie retired from Suit-Kote in 1983, when we discontinued operation of the plant.

(18) Rod Birdsall, President of Suit-Kote, has discussed the Utica location with Robert Hannan of Koppers. Mr. Hannan's office is in Pittsburgh. He is familiar with the site and former operation. Mr. Hannan can be reached at 412-227-2617.

(19) Suit-Kote is aware of no spill or accident incidents during the period when Suit-Kote was operating the site.

(20) During the period of Suit-Kote's operation, there were only one or two employees on-site.

(21) Again, Suit-Kote produced no waste products while operating on-site.

The above information is current and correct to the best of my knowledge. Please feel free to contact me if I can be of further assistance.

Sincerely,

Bill Fowlston

Bill Fowlston
Director of Safety and Environment

dr

cc: Bob Hannan

REF. 12

HARBOR POINT PROPERTY LAND INVESTIGATIONS
STEP 1 LAND REPORT

This Privileged and Confidential Material
is on file at the offices of NYSDEC
50 Wolf Road, Albany, New York

REF. 13

James Doyle,
Sanitary Engineer
NYSDEC
207 Genesse St.
State Office Bldg.
Utica, NY 13501

URS URS Company, Inc.
CONSULTING ENGINEERS
NEW YORK NEW JERSEY

JOB NO. 35154.01

JOB TITLE NYS Superfund

MEMO OF TELECON

DATE 10/8/87 TELEPHONE # (315) 793-2554

PERSON CALLING Muffett Mauche PERSON CALLED James Doyle

REPRESENTING LeRoy Callender PC REPRESENTING NYSDEC - Utica

PURPOSE OF TELECON AND/OR EQUIPMENT INVOLVED:

SW use - Mohawk River - Utica sites.

TEXT OF TELECON

Mohawk River is a Class C water which means fishing & secondary contact (boating) is allowed. (intended best use) There is possible (potential) industrial use too.

@ Bonny Brook [way downstream] the River changes to Class B.

CC:

REF. 14

New York State Department of Environmental Conservation
State Office Bldg., 317 Washington Street
Watertown, NY 13601-3787
315-785-2261

Thomas C. Jorling
Commissioner

RECEIVED
URS COMPANY
AUG 20 1987
JOB #

August 18, 1987

URS Company, Inc.
Ms. Linda J. Clark
570 Delaware Avenue
Buffalo, NY 14202

Dear Ms. Clark:

Enclosed is material requested by Ms. M. Mauche of LeRoy Callender, P.C. for your use in completing the Hazardous Ranking System evaluation for sites within D.E.C. Region 6.

Little Falls Landfill

a) No coastal wetlands within 2 miles
b) Freshwater Wetland LF-3 - see attached map
c) No known critical habitats for endangered species nor national wildlife refuges within 1 mile. As critical habitat data is constantly upgraded, this should not be taken as a definitive statement regarding the presence of such habitats.
d) No State Forest or Wildlife Reserve within 2 miles.

Monarch Chemical Company/ N.Y. Emulsion Tar Products/ Mohawk Valley Oil Corp.

a) No coastal wetlands within 2 miles
b) Freshwater Wetlands UE-2, UE-3, UE-4, UE-5, UE-6, UE-9 and UE-10 are within 1 mile of these sites. See attached map.
c) No known critical habitats for endangered species nor national wildlife refuges within 1 mile. As critical habitat data is constantly upgraded, this should not be taken as a definitive statement regarding the presence of such habitats.
d) Utica Marsh WMA is located in Freshwater Wetlands UE-2, UE-3 and UE-9. Izaak Walton League owns a sizeable parcel within UE-10 and/or UE-11 which would also qualify as a "reserve".

If you have any further questions, please do not hesitate to contact me.

Yours truly,

Leonard E. Ollivett

Leonard E. Ollivett
Conservation Biologist II
Region 6

LEO:jes

Encs.

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION

Freshwater Wetlands Classification Sheet for
That Portion of ONEIDA COUNTY Outside The Adirondack Park -- 8/28/84

Map 31 of 38

Utica East Quadrangle

Wetlands Identification Code	Municipality	Classification
UE-1	Utica	II
UE-2	Utica	II
UE-3	Utica	II
UE-4	Utica	II
UE-5	Utica	II
UE-6	Utica	II
UE-7	Utica	II
UE-9	Utica	II
UE-10	Utica	II
UE-11	Utica	II
UE-12	Utica	II
UW-2	Utica	II

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ONEIDA COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Barneveld Village	391	Wells (Springs)
2	Boonville Village	2400	Boonville Reservoirs
3	Camden Village	2936	Emmons Brook Reservoir, Wells (Springs)
4	Clayville Water Works	468	Wells
5	Clinton Village	3000	Clinton Reservoir, Wells
6	Crystal Spring Water Company	100	Springs
7	Deansboro Water Company	300	Reservoir
8	Forestport Water District	800	Forestport Reservoir
9	McConnellsville Water Company	234	Wells
10	North Bay Water District	374	Wells
11	Oneida City (Madison Co, Page 28)		Florence Creek, Glenmore Reservoir
	Oriskany Falls Village (See No 11 Madison Co, Page 28)	802	
12	Prospect Village	362	Wells
13	Remsen Village	650	Wells (Springs)
14	Rome City	37300	East Branch Fish Creek Reservoir
15	Sauquoit Water District	1800	Wells (Springs)
16	Sylvan Spring Water Company	2200	Vienna & Hollenbeck Reservoirs
17	Utica Board of Water Supply	135000	Hinckley Reservoir
18	Verona Water District	1200	Wells
19	Waterville Village	2000	Big Creek Reservoirs
20	Westernville Spring Water Company	NA	Wells (Springs)
21	Westmoreland Water District #1	550	Wells
Non-Municipal Community			
22	Annsville Youth Camp	70	Wells
23	Bailey's Beach Trailer Park	33	Wells
24	Birches Trailer Court	168	Wells
25	Boyd Mobile Manor	126	Wells
26	Boyd Trailer Park	15	Wells
27	Brandybrook Mobile Home Court	24	Wells
28	Breezy Acres Trailer Court	48	Wells
29	Brookside Mobile Manor	102	Wells
30	Colonial Mobile Motor Court	18	Wells
31	Covewood Mobile Home Park	93	Wells
32	Dandelion Village	22	Wells
33	Delta Lake Trailer Court	117	Wells
34	Derendas Lee Manor Trailer Park	27	Wells
35	E and A Trailer Park	10	Wells
36	Fitch's Trailer Park	144	Wells
37	Green Mansion Park	90	Wells
38	Hamilton College	2000	Hamilton College Reservoirs
39	Hillside Trailer Park	81	Wells
40	Hyde's Trailer Court	15	Wells
41	Ken Coulter Mobile Homes	66	Wells
42	Knoll's Trailer Park	33	Wells (Springs)
43	Laymons Trailer Court	25	Wells
44	Lee Valley Trailer Court	126	Wells (Springs)
45	Maple Grove Mobile Home Court	66	Wells
46	Mayer Mobile Manor	54	Wells
47	McDonalds Mobile Home Estates	45	Wells
48	Meadow Brook Mobile Home Park	78	Wells
59	Mel Haven Mobile Home Park	14	Wells
50	Oneida's Mobile Court #2	40	Wells
51	Paradise Mountain Mobile Home Park	474	Wells
52	Pine Village Estates	72	Wells
53	Quiet Valley Mobile Village	200	Wells
54	Signal Mobile Court	78	Wells
55	Stewarts Mobile Home Park	60	Wells
56	Thompson's Mobile Manor	33	Wells
57	Torraco Trailer Park	78	Wells
58	Verona Mobile Home Park	153	Wells
59	Williams Trailer Park	15	Wells
60	Yerkie's Mobile Manor	70	Wells

1982

15

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ONEIDA COUNTY

SCALE 1:250,000

5 0 5 MILES

NORTH

REF (16)

URS URS Company, Inc.
CONSULTING ENGINEERS
NEW YORK NEW JERSEY

JOB NO. 35154

JOB TITLE NYS SUPERFUND

MEMO OF TELECON

DATE 9-2-87 TELEPHONE # (315) 724-5153

PERSON CALLING L. HARTNETT PERSON CALLED FIRE CHEIF

REPRESENTING URS CO. INC. REPRESENTING CITY OF UTICA

PURPOSE OF TELECON AND/OR EQUIPMENT INVOLVED: FIRE & EXPLOSION THREAT INFO. FOR MONARCH CHEMICAL CO., N.Y. EMULSION & MOHAWK VALLEY

TEXT OF TELECON

HE SAID AS FAR AS HE KNOWS "NONE OF THESE SITES POSE A FIRE OR EXPLOSION THREAT", BUT AT THE MONARCH SITE THEY ARE DEALING WITH CHEMICALS SO "ANYTHING COULD HAPPEN."

CC:

Number of Inhabitants

NEW YORK

1980 Census of Population

17

Table 5. Population of Places: 1960 to 1980

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places / Census Designated Places	Counties	1980	1970	1960
Adams village	Jefferson	1 701	1 951	1 914
Adams Center (CDP)	Jefferson	1 519	...	...
Addison village	Steuben	2 028	2 104	2 185
Afton village	Chenango	982	1 064	956
Akron village	Erie	2 971	2 863	2 841
Albany city	Albany	101 727	115 781	129 726
Albertson (CDP)	Nassau	5 561	6 825	...
Albion village	Orleans	4 897	5 122	5 182
Alden village	Erie	2 488	2 651	2 042
Alexander village	Genesee	483	474	335
Alexandria Bay village	Jefferson	1 265	1 440	1 583
Alfred village	Allegany	4 967	3 804	2 807
Allegany village	Cattaraugus	2 078	2 050	2 064
Almond village	Total	548	658	696
	Allegany (pt. in)	529	627	665
	Steuben (pt. in)	19	31	31
Altamont village	Albany	1 292	1 561	1 365
Altmar village	Oswego	347	448	277
Amagansett (CDP)	Suffolk	2 188	...	...
Amenia (CDP)	Dutchess	1 183	1 157	...
Ames village	Montgomery	224	198	162
Amityville village	Suffolk	9 076	9 794	8 318
Amsterdam city	Montgomery	21 872	25 524	28 772
Andes village	Delaware	372	353	399
Andover village	Allegany	1 120	1 214	1 247
Angelica village	Allegany	982	948	898
Angola village	Erie	2 292	2 676	2 499
Angola on the Lake (CDP)	Erie	1 907	1 573	...
Antwerp village	Jefferson	749	872	881
Apalachin (CDP)	Tioga	1 227	1 233	...
Arcade village	Wyoming	2 052	1 972	1 930
Ardsley village	Westchester	4 183	4 470	3 991
Argyle village	Washington	320	392	355
Arkport village	Steuben	811	986	837
Arlington (CDP)	Dutchess	11 305	11 203	8 317
Armonk (CDP)	Westchester	2 238	...	...
Asharoken village	Suffolk	635	540	253
Athens village	Greene	1 738	1 718	1 754
Atlantic Beach village	Nassau	1 775	1 640	...
Attica village	Total	2 659	2 911	2 758
	Genesee (pt. in)	16	2	-
	Wyoming (pt. in)	2 643	2 909	2 758
Auburn city	Cayuga	32 548	34 599	35 249
Aurora village	Cayuga	926	1 072	834
Averill Park (CDP)	Rensselaer	1 337	1 471	...
Avoca village	Steuben	1 144	1 153	1 086
Avon village	Livingston	3 006	3 260	2 772
Babylon village	Suffolk	12 388	12 897	11 062
Bainbridge village	Chenango	1 603	1 674	1 712
Baldwin (CDP)	Nassau	31 630	34 525	30 204
Baldwinsville village	Onondaga	6 446	6 298	5 985
Ballston Spa village	Saratoga	4 711	4 968	4 991
Bardonia (CDP)	Rockland	2 919	3 216	1 538
Barker village	Niagara	535	567	528
Barneveld village	Oneida	398	423	363
Batavia city	Genesee	16 703	17 338	18 210
Bath village	Steuben	6 042	6 053	6 166
Baxter Estates village	Nassau	911	1 026	932
Bayberry-Lynelle Meadows (CDP)	Onondaga	14 813	...	...
Bayport (CDP)	Suffolk	9 282	8 232	...
Bay Shore (CDP)	Suffolk	10 784	11 119	...
Bayville village	Nassau	7 034	6 147	3 962
Beacon city	Dutchess	12 937	13 255	13 922
Beaverdam Lake (CDP)	Orange	1 326	...	...
Bedford (CDP)	Westchester	1 623	...	...
Bellerose village	Nassau	1 187	1 136	1 083
Belle Terre village	Suffolk	826	678	295
Bellmore (CDP)	Nassau	18 106	18 431	12 784
Bellport village	Suffolk	2 809	3 046	2 461
Belmont village	Allegany	1 024	1 102	1 146
Bemus Point village	Chautauqua	444	407	443
Bergen village	Genesee	976	1 018	964
[illegible] (CDP)	Fulton	1 095	...	...
Bethpage (CDP)	Nassau	16 840	18 555	...
Big Flats (CDP)	Chemung	2 872	2 509	...
Billington Heights (CDP)	Erie	1 782	1 278	...
Binghamton city	Broome	55 860	64 123	75 941
Black River village	Jefferson	1 384	1 307	1 237
Blasdell village	Erie	3 288	3 910	3 909
Bloomingburg village	Sullivan	338	323	300
Bloomingdale village	Essex	608	536	490
Blooming Grove (CDP)	Orange	1 151	...	...
Bloomington-Hickory Bush (CDP)	Ulster	1 002	...	...
Bohemia (CDP)	Suffolk	9 308	8 926	...
Bolivar village	Allegany	1 345	1 379	1 405
Boonville village	Oneida	2 344	2 488	2 403
[illegible] (CDP)	Onondaga	1 160	1 191	...
Brasher Falls-Winthrop (CDP)	St Lawrence	1 454	...	...
Brentwood (CDP)	Suffolk	44 321	28 327	15 387
Brewerton (CDP)	Total	2 472	1 985	...
	Onondaga (pt. in)	1 586	1 201	...
	Oswego (pt. in)	886	784	...
[illegible]	[illegible]	[illegible]	1 638	1 714

Incorporated Places / Census Designated Places	Counties	1980	1970	1960
Bridgehampton (CDP)	Suffolk	1 941	...	[illegible]
Bridgewater village	Oneida	578	601	[illegible]
Brighton (CDP)	Monroe	35 776	...	[illegible]
Brightwaters village	Suffolk	3 286	3 808	[illegible]
Brinckerhoff (CDP)	Dutchess	3 030	2 094	[illegible]
Broadalbin village	Fulton	1 415	1 452	[illegible]
Brockport village	Monroe	9 776	7 878	[illegible]
Brockway (CDP)	Dutchess	1 301		[illegible]
Brocton village	Chautauqua	1 416	1 370	[illegible]
Bronxville village	Westchester	6 267	6 674	[illegible]
Brookville village	Nassau	3 290	3 212	[illegible]
Brownville village	Jefferson	1 099	1 187	[illegible]
Brushton village	Franklin	577	547	[illegible]
Buchanan village	Westchester	2 041	2 110	[illegible]
Buffalo city	Erie	357 870	462 768	[illegible]
Burdett village	Schuyler	410	456	[illegible]
Burke village	Franklin	226	237	[illegible]
Cairo (CDP)	Greene	1 281		[illegible]
Caledonia village	Livingston	2 188	2 327	[illegible]
Calverton-Roanoke (CDP)	Suffolk	4 952		[illegible]
Cambridge village	Washington	1 820	1 769	[illegible]
Camden village	Oneida	2 667	2 936	[illegible]
Camillus village	Onondaga	1 298	1 534	[illegible]
Canajoharie village	Montgomery	2 412	2 686	[illegible]
Canandaigua city	Ontario	10 419	10 488	[illegible]
Canaseraga village	Allegany	700	750	[illegible]
Canastota village	Madison	4 773	5 033	[illegible]
Candor village	Tioga	917	939	[illegible]
Canisteo village	Steuben	2 679	2 772	[illegible]
Canton village	St Lawrence	7 055	6 398	[illegible]
Cape Vincent village	Jefferson	785	820	[illegible]
Carle Place (CDP)	Nassau	5 470	6 326	[illegible]
Carthage village	Jefferson	3 643	3 889	[illegible]
Cassadaga village	Chautauqua	821	905	[illegible]
Castile village	Wyoming	1 135	1 330	[illegible]
Castleton-on-Hudson village	Rensselaer	1 627	1 730	[illegible]
Castorland village	Lewis	277	327	[illegible]
Cato village	Cayuga	475	601	[illegible]
Catskill village	Greene	4 718	5 317	[illegible]
Cattaraugus village	Cattaraugus	1 200	1 200	[illegible]
Cayuga village	Cayuga	604	693	[illegible]
Cayuga Heights village	Tompkins	3 170	3 130	[illegible]
Cazenovia village	Madison	2 599	3 031	[illegible]
Cedarhurst village	Nassau	6 162	6 941	[illegible]
Celoron village	Chautauqua	1 405	1 456	[illegible]
Centereach (CDP)	Suffolk	30 136	9 427	[illegible]
Center Moriches (CDP)	Suffolk	5 703	3 802	[illegible]
Centerport (CDP)	Suffolk	6 576		[illegible]
Central Islip (CDP)	Suffolk	19 734	36 391	[illegible]
Central Square village	Oswego	1 418	1 298	[illegible]
Central Valley (CDP)	Orange	1 705		[illegible]
Centre Island village	Nassau	378	374	[illegible]
Champlain village	Clinton	1 410	1 426	[illegible]
Champlain Park (CDP)	Clinton	1 051	1 207	[illegible]
Chateaugay village	Franklin	869	976	[illegible]
Chatham village	Columbia	2 001	2 239	[illegible]
Chaumont village	Jefferson	620	567	[illegible]
Cheektowaga (CDP)	Erie	92 145		[illegible]
Cherry Creek village	Chautauqua	677	658	[illegible]
Cherry Valley village	Otsego	684	661	[illegible]
Chester village	Orange	1 910	1 627	[illegible]
Chittenango village	Madison	4 290	3 605	[illegible]
Churchville village	Monroe	1 399	1 065	[illegible]
Clarence Center (CDP)	Erie	1 300	1 332	[illegible]
Clark Mills (CDP)	Oneida	1 412	1 206	[illegible]
Claverack-Red Mills (CDP)	Columbia	1 217		[illegible]
Clayton village	Jefferson	1 816	1 970	[illegible]
Clayville village	Oneida	478	535	[illegible]
Cleveland village	Oswego	855	821	[illegible]
Clifton Knolls (CDP)	Saratoga	5 636	5 771	[illegible]
Clifton Springs village	Ontario	2 039	2 058	[illegible]
Clinton village	Oneida	2 107	2 271	[illegible]
Clintondale (CDP)	Ulster	1 193		[illegible]
Clyde village	Wayne	2 491	2 828	[illegible]
Cobleskill village	Schoharie	5 272	4 368	[illegible]
Cohocton village	Steuben	902	897	[illegible]
Cohoes city	Albany	18 144	18 653	[illegible]
Cold Brook village	Herkimer	402	413	[illegible]
Coldenham (CDP)	Orange	1 064		[illegible]
[illegible] (CDP)	Orange	1 741	1 688	[illegible]
Cold Spring village	Putnam	2 161	2 083	[illegible]
Cold Spring Harbor (CDP)	Suffolk	5 336	5 450	[illegible]
Colonie village	Albany	8 869	[illegible]	[illegible]
Commack (CDP)	Suffolk	34 719	24 138	[illegible]
Congers (CDP)	Rockland	7 123	5 928	[illegible]
Constableville village	Lewis	330	347	[illegible]
Constantia (CDP)	Oswego	1 254		[illegible]
Cooperstown village	Otsego	2 342	[illegible]	[illegible]
Copenhagen village	Lewis	656	734	[illegible]
Copiague (CDP)	Suffolk	20 132	[illegible]	[illegible]
Coram (CDP)	Suffolk	24 752	...	[illegible]
Corfu village	Genesee	689	[illegible]	[illegible]
Corinth village	Saratoga	2 702	[illegible]	[illegible]
Corning city	Steuben	12 953	[illegible]	[illegible]
Cornwall on Hudson village	Orange	3 164	[illegible]	[illegible]
[illegible]	[illegible]	20 138	[illegible]	[illegible]

(17)

Table 5. Population of Places: 1960 to 1980—Con.

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places / Census Designated Places	Counties	1980	1970	1960
Cottam Hill (CDP)	Dutchess	1 380	...	...
Country Knolls (CDP)	Saratoga	2 497	2 082	...
Cove Neck village	Nassau	331	344	299
Coxsackie village	Greene	2 786	2 399	2 849
Croghan village	Lewis	703	765	821
Croton-on-Hudson village	Westchester	6 889	7 523	6 812
Crown Heights (CDP)	Dutchess	3 225	3 292	...
Cuba village	Allegany	1 739	1 735	1 949
Cutchogue-New Suffolk (CDP)	Suffolk	2 788	...	...
Dannemora village	Clinton	3 770	3 735	4 835
Dansville village	Livingston	4 979	5 436	5 460
Deer Park (CDP)	Suffolk	30 394	32 274	16 726
Deferiet village	Jefferson	326	347	470
Delanson village	Schenectady	448	508	398
Delevan village	Cattaraugus	1 113	994	777
Delhi village	Delaware	3 374	3 017	2 307
Delmar (CDP)	Albany	8 423	...	...
Depew village	Erie	19 819	22 158	13 580
Deposit village	Total	1 897	2 061	2 025
	Broome (pt. in)	1 017	1 119	1 187
	Delaware (pt. in)	880	942	838
Dering Harbor village	Suffolk	16	24	19
De Ruyter village	Madison	542	643	627
De Witt (CDP)	Onondaga	9 024	10 032	...
Dexter village	Jefferson	1 053	1 061	1 009
Dix Hills (CDP)	Suffolk	26 693	10 050	...
Dobbs Ferry village	Westchester	10 053	10 353	9 260
Dolgeville village	Total	2 602	2 872	3 058
	Fulton (pt. in)	162	175	185
	Herkimer (pt. in)	2 440	2 697	2 873
Dover Plains (CDP)	Dutchess	1 753	...	...
Dresden village	Yates	378	430	437
Dryden village	Tompkins	1 761	1 490	1 263
Dundee village	Yates	1 556	1 539	1 468
Dunkirk city	Chautauqua	15 310	16 855	18 205
Earlville village	Total	985	1 050	1 004
	Chenango (pt. in)	363	377	370
	Madison (pt. in)	622	673	634
East Aurora village	Erie	6 803	7 033	6 791
East Bloomfield village	Ontario	587	643	488
East Cayuga Heights (CDP)	Tompkins	2 630	2 611	...
Eastchester (CDP)	Westchester	20 305	23 750	...
East Farmingdale (CDP)	Suffolk	5 522	...	...
East Glenville (CDP)	Schenectady	6 537	5 898	...
East Hampton village	Suffolk	1 886	1 753	1 772
East Hills village	Nassau	7 160	8 624	7 184
East Islip (CDP)	Suffolk	13 852	6 861	...
East Massapequa (CDP)	Nassau	13 987	15 926	14 779
East Meadow (CDP)	Nassau	39 317	46 290	46 036
East Middletown (CDP)	Orange	4 330	2 640	1 752
East Northport (CDP)	Suffolk	20 187	12 392	8 381
East Patchogue (CDP)	Suffolk	18 139	8 092	...
East Quogue (CDP)	Suffolk	3 668	1 143	...
East Randolph village	Cattaraugus	655	636	594
East Rochester village	Monroe	7 596	8 347	8 152
East Rockaway village	Nassau	10 917	11 795	10 721
East Syracuse village	Onondaga	3 412	4 333	4 708
East Williston village	Nassau	2 708	2 808	2 940
Eatons Neck (CDP)	Suffolk	1 574	...	...
Eden (CDP)	Erie	3 088	2 962	2 366
Edwards village	St Lawrence	561	576	658
Elba village	Genesee	730	752	739
Elbridge village	Onondaga	1 099	1 040	828
Elizabethtown village	Essex	659	607	779
Ellenville village	Ulster	4 405	4 482	5 003
Ellicottville village	Cattaraugus	713	955	1 150
Ellisburg village	Jefferson	307	337	320
Elma Center (CDP)	Erie	2 450	2 784	...
Elmira city	Chemung	35 327	39 945	46 517
Elmira Heights village	Chemung	4 279	4 906	5 157
Elmira Heights North (CDP)	Chemung	2 659	2 906	2 328
Elmont (CDP)	Nassau	27 592	29 363	30 138
Elmsford village	Westchester	3 361	3 911	3 795
Elwood (CDP)	Suffolk	11 847	15 031	...
Endicott village	Broome	14 457	16 556	18 775
Endwell (CDP)	Broome	13 745	15 999	...
Esperance village	Schoharie	374	408	314
Evans Mills village	Jefferson	651	714	618
Fabius village	Onondaga	367	374	378
Fair Haven village	Cayuga	976	859	764
Fairmount (CDP)	Onondaga	13 415	15 317	...
Fairport village	Monroe	5 970	6 474	5 507
Fairview (CDP)	Dutchess	5 852	8 517	8 626
Falconer village	Chautauqua	2 778	2 983	3 343
Farmingdale village	Nassau	7 946	9 297	6 128
Farmingville (CDP)	Suffolk	13 398	...	...
Farnham village	Erie	404	546	422
Fayetteville village	Onondaga	4 709	4 996	4 311
Fernwood (CDP)	Saratoga	3 660	3 659	2 108
Fillmore village	Allegany	563	537	522
Firthcliffe (CDP)	Orange	4 430	4 025	2 824
Fishkill village	Dutchess	1 555	913	1 003
Fleischmanns village	Delaware	346	434	439
Floral Park village	Nassau	16 805	18 466	17 499
Florida village	Orange	1 947	1 674	1 550
Flower Hill village	Nassau	4 558	4 486	4 594
Fonda village	Montgomery	1 006	1 120	1 004
Forestville village	Chautauqua	804	908	905
Fort Ann village	Washington	509	362	453
Fort Edward village	Washington	3 561	3 733	3 737
Fort Johnson village	Montgomery	646	711	876
Fort Montgomery (CDP)	Orange	1 396	...	...
Fort Plain village	Montgomery	2 555	2 809	2 809
Fort Salonga (CDP)	Suffolk	9 550	...	...
Frankfort village	Herkimer	2 995	3 305	3 872
Franklin village	Delaware	440	552	525
Franklin Square (CDP)	Nassau	29 051	32 156	32 483
Franklinville village	Cattaraugus	1 887	1 948	2 124
Fredonia village	Chautauqua	11 126	10 326	8 477
Freeport village	Nassau	38 272	40 374	34 419
Freeville village	Tompkins	449	664	471
Frewsburg (CDP)	Chautauqua	1 908	1 772	1 623
Friendship (CDP)	Allegany	1 461	1 285	1 231
Fulton city	Oswego	13 312	14 003	14 261
Fultonville village	Montgomery	777	812	815
Gainesville village	Wyoming	334	385	369
Galway village	Saratoga	245	270	309
Gang Mills (CDP)	Steuben	2 300	1 258	
Garden City village	Nassau	22 927	25 373	23 948
Garden City Park (CDP)	Nassau	7 712	7 488	...
Gardnertown (CDP)	Orange	4 238	4 614	...
Gasport (CDP)	Niagara	1 339	...	...
Gates-North Gates (CDP)	Monroe	15 244	...	...
Geneseo village	Livingston	6 746	5 714	3 284
Geneva city	Total	15 133	16 793	17 286
	Ontario (pt. in)	15 133	16 793	17 286
	Seneca (pt. in)	-	-	-
Gilbertsville village	Otsego	455	552	522
Glasco (CDP)	Ulster	1 179	1 169	...
Glen Cove city	Nassau	24 618	25 770	23 817
Glenham (CDP)	Dutchess	2 832	2 720	...
Glen Park village	Jefferson	506	587	561
Glens Falls city	Warren	15 897	17 222	18 580
Glens Falls North (CDP)	Warren	6 956	...	...
Gloversville city	Fulton	17 836	19 677	21 741
Golden's Bridge (CDP)	Westchester	1 367	1 101	...
Goshen village	Orange	4 874	4 342	3 906
Gouverneur village	St Lawrence	4 285	4 574	4 946
Gowanda village	Total	2 713	3 110	3 352
	Cattaraugus (pt. in)	1 864	2 098	2 273
	Erie (pt. in)	849	1 012	1 079
Grand View-on-Hudson village	Rockland	312	325	330
Granville village	Washington	2 696	2 784	2 715
Great Neck village	Nassau	9 168	10 798	10 171
Great Neck Estates village	Nassau	2 936	3 131	3 262
Great Neck Plaza village	Nassau	5 604	6 043	4 948
Greece (CDP)	Monroe	16 177	...	...
Greene village	Chenango	1 747	1 874	2 051
Green Island village	Albany	2 696	3 297	3 533
Greenlawn (CDP)	Suffolk	13 869	8 493	5 422
Greenport village	Suffolk	2 273	2 481	2 608
Greenport West (CDP)	Suffolk	1 571	...	..
Greenville (CDP)	Westchester	8 706	...	...
Greenwich village	Washington	1 955	2 092	2 263
Greenwood Lake village	Orange	2 809	2 262	1 236
Groton village	Tompkins	2 313	2 112	2 123
Hagaman village	Montgomery	1 331	1 410	1 292
Hamburg village	Erie	10 582	10 215	9 145
Hamilton village	Madison	3 725	3 636	3 348
Hammond village	St. Lawrence	271	273	314
Hammondsport village	Steuben	1 065	1 066	1 176
Hampton Bays (CDP)	Suffolk	7 256	1 862	1 431
Hampton Park (CDP)	Suffolk	1 331		
Hancock village	Delaware	1 526	1 688	1 830
Hannibal village	Oswego	680	686	611
Harriman village	Orange	796	955	752
Harriman South (CDP)	Orange	1 254	...	.
Harris Hill (CDP)	Erie	5 087	...	.
Harrison village	Westchester	23 046	.	
Harrisville village	Lewis	937	836	842
Hartsdale (CDP)	Westchester	10 216	12 226	
Hastings-on-Hudson village	Westchester	8 573	9 479	8 979
Hauppauge (CDP)	Suffolk	20 960	13 957	
Haverstraw village	Rockland	8 800	8 198	5 771
Haviland (CDP)	Dutchess	3 578	3 447	..
Hawthorne (CDP)	Westchester	5 010	.	
Head of the Harbor village	Suffolk	1 023	943	524
Hempstead village	Nassau	40 404	39 411	34 641
Herkimer village	Herkimer	8 383	8 960	9 396
Hermon village	St. Lawrence	490	521	612
Herricks (CDP)	Nassau	8 123	9 112	.
Herrings village	Jefferson	170	137	171
Heuvelton village	St Lawrence	777	770	810
Hewlett (CDP)	Nassau	6 986	6 796	
Hewlett Bay Park village	Nassau	489	586	520
Hewlett Harbor village	Nassau	1 331	1 512	1 610
Hewlett Neck village	Nassau	472	529	507
Hicksville (CDP)	Nassau	43 245	49 820	50 405
Highland (CDP)	Ulster	3 967	2 184	2 93[illegible]
Highland Falls village	Orange	4 187	4 638	4 469
Highland Mills (CDP)	Orange	2 034		
Hillburn village	Rockland	926	1 058	1 114
Hillcrest (CDP)	Rockland	5 733	5 357	

Table 5. Population of Places: 1960 to 1980—Con.

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places / Census Designated Places	Counties	1980	1970	1960
Hills (CDP)	Dutchess	2 591	2 750	...
Hillside Lake (CDP)	Dutchess	1 382	...	...
Hilton village	Monroe	4 151	2 440	1 334
Hobart village	Delaware	473	531	585
Holbrook (CDP)	Suffolk	24 382	...	...
Holcomb village	Ontario	952	778	460
Holland (CDP)	Erie	1 347	...	...
Holland Patent village	Oneida	534	556	538
Holley village	Orleans	1 882	1 868	1 788
Holtsville (CDP)	Suffolk	13 515	...	...
Homer village	Cortland	3 635	4 143	3 622
Honeoye Falls village	Monroe	2 410	2 248	2 143
Hoosick Falls village	Rensselaer	3 609	3 897	4 023
Hopewell Junction (CDP)	Dutchess	1 754	2 055	...
Hornell city	Steuben	10 234	12 144	13 907
Horseheads village	Chemung	7 348	7 989	7 207
Horseheads North (CDP)	Chemung	3 081	2 753	...
Houghton (CDP)	Allegany	1 604	1 620	...
Hudson city	Columbia	7 986	8 940	11 075
Hudson Falls village	Washington	7 419	7 917	7 752
Hunter village	Greene	511	238	457
Huntington (CDP)	Suffolk	21 727	'12 601	11 255
Huntington Bay village	Suffolk	1 783	1 789	1 267
Huntington Station (CDP)	Suffolk	28 769	28 817	23 438
Hurley (CDP)	Ulster	4 892	4 081	...
Hyde Park (CDP)	Dutchess	2 550	2 805	1 979
Ilion village	Herkimer	9 450	9 808	10 199
Interlaken village	Seneca	685	733	780
Inwood (CDP)	Nassau	8 228	8 433	10 362
Irondequoit (CDP)	Monroe	57 648	...	...
Irvington village	Westchester	5 774	5 878	5 494
Island Park village	Nassau	4 847	5 396	3 846
Islip (CDP)	Suffolk	13 438	7 692	...
Islip Terrace (CDP)	Suffolk	5 588	...	...
Ithaca city	Tompkins	28 732	26 226	28 799
Jamesport (CDP)	Suffolk	1 069	...	...
Jamestown city	Chautauqua	35 775	39 795	41 818
Jamestown West (CDP)	Chautauqua	2 680	2 491	...
Jefferson Heights (CDP)	Greene	1 610	...	...
Jefferson Valley-Yorktown (CDP)	Westchester	13 380	9 008	...
Jeffersonville village	Sullivan	556	421	434
Jericho (CDP)	Nassau	12 739	14 010	10 795
Johnson City village	Broome	17 126	18 025	19 118
Johnstown city	Fulton	9 360	10 045	10 390
Jordan village	Onondaga	1 371	1 493	1 390
Keeseville village	Total	2 025	2 122	2 213
	Clinton (pt. in)	1 055	1 210	1 239
	Essex (pt. in)	970	912	974
Kenmore village	Erie	18 474	20 980	21 261
Kensington village	Nassau	1 132	'1 402	1 166
Kerhonkson (CDP)	Ulster	1 646	1 243	...
Keuka Park (CDP)	Yates	1 153	...	...
Kinderhook village	Columbia	1 377	1 233	1 078
Kings Park (CDP)	Suffolk	16 131	5 555	4 949
Kings Point village	Nassau	5 234	'5 614	5 410
Kingston city	Ulster	24 481	25 544	29 260
Kiryas Joel village	Orange	2 088	...	...
Lackawanna city	Erie	22 701	28 657	29 564
Lacona village	Oswego	582	556	556
Lake (CDP)	Orange	1 210	1 352	...
Lake Carmel (CDP)	Putnam	7 295	4 796	2 735
Lake Erie Beach (CDP)	Erie	4 625	3 467	2 117
Lake George village	Warren	1 047	1 046	1 026
Lake Grove village	Suffolk	9 692	8 133	...
Lake Katrine (CDP)	Ulster	2 011	1 092	1 149
Lake Luzerne-Hadley (CDP)	Total	1 988	...	...
	Saratoga (pt. in)	825	...	...
	Warren (pt. in)	1 163	...	...
Lake Placid village	Essex	2 490	2 731	2 998
Lake Ronkonkoma (CDP)	Suffolk	38 336	...	...
Lake Success village	Nassau	2 396	3 254	2 954
Lakeview (CDP)	Nassau	5 276	5 471	...
Lakewood village	Chautauqua	3 941	3 866	3 933
Lancaster village	Erie	13 056	13 365	12 254
Lansing village	Tompkins	3 039	...	...
Larchmont village	Westchester	6 308	7 203	6 789
Latham (CDP)	Albany	11 182	9 661	...
Lattingtown village	Nassau	1 749	1 773	1 461
Laurel Hollow village	Nassau	1 527	1 401	834
Laurens village	Otsego	276	320	291
Lawrence village	Nassau	6 175	6 566	5 907
Leicester village	Livingston	462	368	365
Le Roy village	Genesee	4 900	5 118	4 662
Levittown (CDP)	Nassau	57 045	65 440	65 276
Lewiston village	Niagara	3 326	3 292	3 320
Liberty village	Sullivan	4 293	'4 514	4 704
Lima village	Livingston	2 025	1 686	1 366
Lime Lake-Machias (CDP)	Cattaraugus	1 191	...	...
Limestone village	Cattaraugus	446	535	539
Lincoln Park (CDP)	Ulster	2 644	2 851	2 707
Lindenhurst village	Suffolk	26 919	28 359	20 905
Lisle village	Broome	357	336	335
Little Falls city	Herkimer	6 156	7 629	8 935
Little Valley village	Cattaraugus	1 203	1 340	1 244
Liverpool village	Onondaga	2 849	3 307	3 487
Livingston Manor (CDP)	Sullivan	1 436	1 522	2 080
Livonia village	Livingston	1 238	1 278	946

Incorporated Places / Census Designated Places	Counties	1980	1970	19
Lloyd Harbor village	Suffolk	3 405	3 371	2 5
Lockport city	Niagara	24 844	25 399	26 4
Locust Grove (CDP)	Nassau	9 670	11 626	11 5
Lodi village	Seneca	334	353	3
Long Beach city	Nassau	34 073	33 127	26 4
Lorenz Park (CDP)	Columbia	1 720	1 995	
Loudonville (CDP)	Albany	11 480	9 299	
Lowville village	Lewis	3 364	3 671	3 6
Lynbrook village	Nassau	20 424	'23 151	19 8
Lyncourt (CDP)	Onondaga	5 129	...	
Lyndonville village	Orleans	916	888	
Lyons village	Wayne	4 160	4 496	4 6
Lyons Falls village	Lewis	755	852	8
Macedon village	Wayne	1 400	1 168	
McGraw village	Cortland	1 188	1 319	1
Madison village	Madison	396	386	
Mahopac (CDP)	Putnam	7 681	5 265	1
Malone village	Franklin	7 668	8 048	8
Malverne village	Nassau	9 262	10 036	9
Mamaroneck village	Westchester	17 616	18 909	17
Manchester village	Ontario	1 698	1 305	
Manhasset (CDP)	Nassau	8 485	8 541	
Manlius village	Onondaga	5 241	4 295	
Mannsville village	Jefferson	431	494	
Manorhaven village	Nassau	5 384	'5 488	3
Marathon village	Cortland	1 046	1 053	
Marcellus village	Onondaga	1 870	2 017	1
Margaretville village	Delaware	755	816	
Marion (CDP)	Wayne	1 080	...	
Marlboro (CDP)	Ulster	2 275	1 580	
Massapequa (CDP)	Nassau	24 454	26 821	32
Massapequa Park village	Nassau	19 779	22 112	19
Massena village	St. Lawrence	12 851	14 042	15
Mastic (CDP)	Suffolk	10 413	...	
Mastic Beach (CDP)	Suffolk	8 318	4 870	3
Matinecock village	Nassau	985	841	
Mattituck (CDP)	Suffolk	3 923	1 995	1
Mattydale (CDP)	Onondaga	7 511	8 292	
Maybrook village	Orange	2 007	1 536	1
Mayfield village	Fulton	944	981	
Mayville village	Chautauqua	1 626	1 567	
Mechanicville city	Saratoga	5 500	6 247	6
Medford (CDP)	Suffolk	20 418	...	
Medina village	Orleans	6 392	6 415	6
Melrose Park (CDP)	Cayuga	2 171	2 189	2
Melville (CDP)	Suffolk	8 139	6 641	
Menands village	Albany	4 012	3 449	2
Meridian village	Cayuga	344	369	
Merrick (CDP)	Nassau	24 478	25 904	18
Merriewold Lake (CDP)	Orange	3 661	2 564	
Mexico village	Oswego	1 621	1 555	1
Middleburgh village	Schoharie	1 358	1 410	1
Middle Hope (CDP)	Orange	3 229	2 327	
Middle Island (CDP)	Suffolk	5 703		
Middleport village	Niagara	1 995	2 132	1
Middletown city	Orange	21 454	22 607	23
Middleville village	Herkimer	647	725	
Milford village	Otsego	514	527	
Millbrook village	Dutchess	1 343	1 735	1
Miller Place (CDP)	Suffolk	7 877	...	
Millerton village	Dutchess	1 013	1 042	
Mill Neck village	Nassau	959	982	
Millport village	Chemung	440	480	
Milton (CDP)	Saratoga	2 063	1 861	
Milton (CDP)	Ulster	1 253		
Mineola village	Nassau	20 757	21 845	20
Minetto (CDP)	Oswego	1 629		
Mineville-Witherbee (CDP)	Essex	1 925	1 967	
Minoa village	Onondaga	3 640	2 245	
Mohawk village	Herkimer	2 956	3 301	
Monroe village	Orange	5 996	4 439	
Monroe Southeast (CDP)	Orange	1 267		
Monsey (CDP)	Rockland	12 380	8 797	
Montauk (CDP)	Suffolk	2 828		
Montgomery village	Orange	2 316	1 533	
Monticello village	Sullivan	6 306	5 991	
Montour Falls village	Schuyler	1 791	1 534	
Mooers village	Clinton	549	536	
Moravia village	Cayuga	1 582	1 642	
Morris village	Otsego	681	675	
Morrisonville (CDP)	Clinton	1 721	1 276	
Morristown village	St. Lawrence	461	532	
Morrisville village	Madison	2 707	2 296	
Mountain Lodge (CDP)	Orange	1 230		
Mount Kisco village	Westchester	8 025	8 172	
Mount Morris village	Livingston	3 039	3 417	
Mount Sinai (CDP)	Suffolk	6 591		
Mount Vernon city	Westchester	66 713	72 778	
Munnsville village	Madison	499	435	
Munsey Park village	Nassau	2 806	2 980	
Munsons Corners (CDP)	Cortland	2 478	2 076	
Muttontown village	Nassau	2 725	2 38[illegible]	
Myers Corner (CDP)	Dutchess	5 180	2 826	
Nanuet (CDP)	Rockland	12 578	10 447	
Napanoch (CDP)	Ulster	1 260		
Naples village	Ontario	1 225	1 324	
Nassau village	Rensselaer	1 285	1 466	

17

Table 5. **Population of Places: 1960 to 1980**—Con.

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places Census Designated Places	Counties	1980	1970	1960
Nassau Lake (CDP)	Rensselaer	1 306	...	...
Nelliston village	Montgomery	691	716	729
Nelsonville village	Putnam	567	503	555
Nesconset (CDP)	Suffolk	10 706	10 048	1 964
Newark village	Wayne	10 017	11 644	12 868
Newark Valley village	Tioga	1 190	1 286	1 234
New Berlin village	Chenango	1 392	1 369	1 262
Newburgh city	Orange	23 438	26 219	30 979
Newburgh West (CDP)	Orange	1 381	...	...
New Cassel (CDP)	Nassau	9 635	8 721	...
New City (CDP)	Rockland	35 859	27 344	...
Newfane (CDP)	Niagara	3 120	2 588	1 423
New Hackensack (CDP)	Dutchess	1 532	1 111	...
New Hampton-Denton (CDP)	Orange	1 385	...	...
New Hartford village	Oneida	2 313	2 433	2 468
New Hyde Park village	Nassau	9 801	10 116	10 808
New Paltz village	Ulster	4 938	6 058	3 041
Newport village	Herkimer	746	908	827
New Rochelle city	Westchester	70 794	75 385	76 812
New Square village	Rockland	1 750	1 156	...
New Windsor (CDP)	Orange	7 812	8 803	4 041
New Windsor West (CDP)	Orange	2 120	...	...
New York city	Total	7 071 639	7 895 563	7 781 984
	Bronx (pt. in)	1 168 972	1 471 701	1 424 815
	Kings (pt. in)	2 230 936	2 602 012	2 627 319
	New York (pt. in)	1 428 285	1 539 233	1 698 281
	Queens (pt. in)	1 891 325	1 987 174	1 809 578
	Richmond (pt. in)	352 121	295 443	221 991
New York Mills village	Oneida	3 560	3 805	3 788
Niagara Falls city	Niagara	71 384	85 615	102 394
Niagara Town (CDP)	Niagara	9 648	...	...
Nichols village	Tioga	613	638	663
Niskayuna (CDP)	Schenectady	5 223	6 186	...
Nissequogue village	Suffolk	1 462	1 120	332
Niverville (CDP)	Columbia	1 856	...	...
Norfolk (CDP)	St. Lawrence	1 599	1 379	1 353
North Amityville (CDP)	Suffolk	13 140	11 936	...
North Babylon (CDP)	Suffolk	19 019	39 526	...
North Ballston Spa (CDP)	Saratoga	1 330	1 296	...
North Bay Shore (CDP)	Suffolk	35 020	...	...
North Bellmore (CDP)	Nassau	20 630	22 893	19 639
North Bellport (CDP)	Suffolk	7 432	5 903	...
North Boston (CDP)	Erie	2 748	1 635	...
North Collins village	Erie	1 496	1 675	1 574
North Great River (CDP)	Suffolk	11 416	12 080	...
North Haven village	Suffolk	738	694	450
North Hills village	Nassau	1 587	295	359
North Hornell village	Steuben	813	919	917
North Hudson Falls (CDP)	Washington	2 309	...	...
North Lindenhurst (CDP)	Suffolk	11 511	11 117	...
North Massapequa (CDP)	Nassau	21 385	23 123	...
North Merrick (CDP)	Nassau	12 848	13 650	12 976
North New Hyde Park (CDP)	Nassau	15 114	18 154	17 929
North Patchogue (CDP)	Suffolk	7 126	5 232	...
Northport village	Suffolk	7 651	7 494	5 972
North Sea (CDP)	Suffolk	1 171	...	...
North Syracuse village	Onondaga	7 970	8 687	7 412
North Tarrytown village	Westchester	7 994	8 334	8 818
North Tonawanda city	Niagara	35 760	36 012	34 757
North Valley Stream (CDP)	Nassau	14 530	14 881	17 239
Northville village	Fulton	1 304	1 192	1 156
Northville (CDP)	Suffolk	2 983	...	...
North Wantagh (CDP)	Nassau	12 677	15 053	...
Northwest Harbor (CDP)	Suffolk	2 459	...	...
Norwich city	Chenango	8 082	8 843	9 175
Norwood village	St. Lawrence	1 902	2 098	2 200
Noyack (CDP)	Suffolk	2 657	...	...
Nunda village	Livingston	1 169	1 254	1 224
Nyack village	Rockland	6 428	6 659	6 062
Oakdale (CDP)	Suffolk	8 090	7 334	...
Oakfield village	Genesee	1 791	1 964	2 070
Ocean Beach village	Suffolk	155	169	111
Oceanside (CDP)	Nassau	33 639	35 372	30 448
Odessa village	Schuyler	613	606	573
Ogdensburg city	St. Lawrence	12 375	14 554	16 122
Olcott (CDP)	Niagara	1 571	1 592	1 215
Old Bethpage (CDP)	Nassau	6 215	7 084	...
Old Brookville village	Nassau	1 574	1 785	1 126
Old Field village	Suffolk	829	812	373
Old Forge (CDP)	Herkimer	1 061	...	...
Old Westbury village	Nassau	3 277	2 667	2 064
Olean city	Cattaraugus	18 207	19 169	21 868
Oneida city	Madison	10 810	11 658	11 677
Oneida Castle village	Oneida	751	788	754
Oneonta city	Otsego	14 933	16 030	13 412
Orange Lake (CDP)	Orange	5 120	4 348	...
Orchard Park village	Erie	3 671	3 732	3 278
Oriskany village	Oneida	1 680	1 627	1 580
Oriskany Falls village	Oneida	802	927	972
Ossining village	Westchester	20 196	21 659	18 662
Oswego city	Oswego	19 793	20 913	22 155
Otego village	Otsego	1 089	956	875
Otisville village	Orange	953	933	896
Ovid village	Seneca	666	779	789
Owego village	Tioga	4 364	5 152	5 417
Oxford village	Chenango	1 765	1 944	1 871
Oyster Bay (CDP)	Nassau	6 497	[illegible]	[illegible]

Incorporated Places Census Designated Places	Counties	1980	1970	1960
Oyster Bay Cove village	Nassau	1 799	1 320	988
Painted Post village	Steuben	2 196	2 496	2 570
Palatine Bridge village	Montgomery	604	601	578
Palmyra village	Wayne	3 729	3 776	3 476
Panama village	Chautauqua	511	489	450
Parish village	Oswego	535	634	567
Patchogue village	Suffolk	11 291	11 582	8 838
Pawling village	Dutchess	1 996	1 914	1 734
Peach Lake (CDP)	Total	1 464	..	
	Putnam (pt. in)	998	.	.
	Westchester (pt. in)	466	...	
Pearl River (CDP)	Rockland	15 893	17 146	
Peconic (CDP)	Suffolk	1 056		
Peekskill city	Westchester	18 236	19 283	18 737
Pelham village	Westchester	6 848	2 076	1 964
Pelham Manor village	Westchester	6 130	6 673	6 114
Penn Yan village	Yates	5 242	5 293	5 770
Perry village	Wyoming	4 198	4 538	4 629
Perrysburg village	Cattaraugus	405	433	434
Peru (CDP)	Clinton	1 716	1 261	
Phelps village	Ontario	2 004	1 989	1 887
Philadelphia village	Jefferson	855	858	868
Philmont village	Columbia	1 539	1 674	1 750
Phoenix village	Oswego	2 357	2 617	2 408
Piermont village	Rockland	2 269	2 386	1 906
Pike village	Wyoming	367	373	345
Pine Bush (CDP)	Orange	1 255	1 183	1 076
Pine Hill village	Ulster	216	247	180
Pine Plains (CDP)	Dutchess	1 300	...	..
Pitcher Hill (CDP)	Onondaga	6 063	...	...
Pittsford village	Monroe	1 568	1 755	1 749
Plainedge (CDP)	Nassau	9 629	10 759	21 973
Plainview (CDP)	Nassau	28 037	31 695	27 710
Plandome village	Nassau	1 503	1 593	1 379
Plandome Heights village	Nassau	963	1 002	1 025
Plandome Manor village	Nassau	883	835	705
Plattsburgh city	Clinton	21 057	18 715	20 172
Plattsburgh AFB (CDP)	Clinton	5 905	7 078	...
Plattsburgh West (CDP)	Clinton	1 210	...	...
Pleasant Valley (CDP)	Dutchess	1 255	1 372	...
Pleasantville village	Westchester	6 749	7 110	5 877
Poestenkill (CDP)	Rensselaer	1 031	...	...
Poland village	Herkimer	553	629	564
Pomona village	Rockland	2 421	1 792	
Poquott village	Suffolk	588	427	295
Port Byron village	Cayuga	1 400	1 330	1 201
Port Chester village	Westchester	23 565	25 803	24 960
Port Dickinson village	Broome	1 974	2 132	2 295
Port Ewen (CDP)	Ulster	2 813	2 882	2 622
Port Henry village	Essex	1 450	1 532	1 767
Port Jefferson village	Suffolk	6 731	5 515	...
Port Jefferson Station (CDP)	Suffolk	17 009	7 403	1 041
Port Jervis city	Orange	8 699	8 852	9 268
Port Leyden village	Lewis	740	862	898
Portville village	Cattaraugus	1 136	1 304	1 336
Port Washington (CDP)	Nassau	14 521	15 923	15 657
Port Washington North village	Nassau	3 147	2 883	722
Potsdam village	St. Lawrence	10 635	10 303	7 765
Poughkeepsie city	Dutchess	29 757	32 029	38 330
Prospect village	Oneida	348	392	348
Pulaski village	Oswego	2 415	2 480	2 256
Quogue village	Suffolk	966	865	692
Randolph village	Cattaraugus	1 398	1 498	1 414
Ransomville (CDP)	Niagara	1 401	1 034	
Ravena village	Albany	3 091	2 797	2 410
Red Creek village	Wayne	645	626	689
Red Hook village	Dutchess	1 692	1 680	1 719
Red Oaks Mill (CDP)	Dutchess	5 236	3 919	.
Remsen village	Oneida	621	602	567
Remsenburg-Speonk (CDP)	Suffolk	1 868	...	...
Rensselaer city	Rensselaer	9 047	10 136	10 506
Rensselaer Falls village	St. Lawrence	360	332	375
Rhinebeck village	Dutchess	2 542	2 336	2 093
Richburg village	Allegany	494	482	493
Richfield Springs village	Otsego	1 561	1 540	1 630
Richmondville village	Schoharie	792	826	743
Richville village	St. Lawrence	336	334	292
Ridge (CDP)	Suffolk	8 977	..	.
Ripley (CDP)	Chautauqua	1 205	1 173	1 247
Riverhead (CDP)	Suffolk	6 339	7 585	5 830
Riverside village	Steuben	684	911	1 030
Riverside-Flanders (CDP)	Suffolk	5 400	..	
Rochdale (CDP)	Dutchess	1 825	1 849	1 800
Rochester city	Monroe	241 741	295 011	318 611
Rockville Centre village	Nassau	25 412	27 444	26 355
Rocky Point (CDP)	Suffolk	7 012	..	
Roessleville (CDP)	Albany	11 685	5 351	
Rome city	Oneida	43 826	50 148	51 646
Urban part		42 205	47 655	
Roosevelt (CDP)	Nassau	14 109	15 008	12 883
Rosendale Village (CDP)	Ulster	1 134	.	
Roslyn village	Nassau	2 134	2 607	2 681
Roslyn Estates village	Nassau	1 292	1 420	1 289
Roslyn Harbor village	Nassau	1 129	1 125	925
Roslyn Heights (CDP)	Nassau	6 546	7 242	
Rotterdam (CDP)	Schenectady	22 933	25 214	16 871
[illegible]	[illegible]	[illegible]		

(17)

Table 5. Population of Places: 1960 to 1980—Con.

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places Census Designated Places	Counties	1980	1970	1960
Round Lake village	Saratoga	791	886	...
Rouses Point village	Clinton	2 266	2 250	2 160
Ruby (CDP)	Ulster	1 059	...	...
Rushville village	Total	540	560	465
	Ontario (pt. in)	148	194	159
	Yates (pt. in)	400	376	306
Russell Gardens village	Nassau	1 263	*1 207	1 156
Rye city	Westchester	15 083	15 869	14 225
Sackets Harbor village	Jefferson	1 017	1 202	1 279
Saddle Rock village	Nassau	921	895	1 109
Sag Harbor village	Suffolk	2 581	2 363	2 346
St. Bonaventure (CDP)	Cattaraugus	2 587	...	...
St. James (CDP)	Suffolk	12 122	*10 500	3 524
St. Johnsville village	Montgomery	1 974	2 089	2 196
Salamanca city	Cattaraugus	6 890	7 877	8 480
Salem village	Washington	959	1 025	1 076
Saltaire village	Suffolk	35	37	28
Sand Ridge (CDP)	Onondaga	1 293	1 109	...
Sands Point village	Nassau	2 742	2 916	2 161
Sandy Creek village	Oswego	765	731	697
Saranac Lake village	Total	5 578	6 086	6 421
	Essex (pt. in)	1 462	1 665	1 780
	Franklin (pt. in)	4 116	4 421	4 641
Saratoga Springs city	Saratoga	23 906	18 845	16 630
Saugerties village	Ulster	3 882	4 190	4 286
Saugerties South (CDP)	Ulster	2 919	3 159	...
Savona village	Steuben	922	922	906
Sayville (CDP)	Suffolk	12 013	11 680	...
Scarsdale village	Westchester	17 650	19 229	17 968
Schaghticoke village	Rensselaer	677	860	720
Schenectady city	Schenectady	67 972	*77 958	81 682
Schenevus village	Otsego	625	540	493
Schoharie village	Schoharie	1 016	1 125	1 168
Schuylerville village	Saratoga	1 256	1 402	1 361
Scotchtown (CDP)	Orange	7 352	2 119	...
Scotia village	Schenectady	7 280	*7 370	7 625
Scottsville village	Monroe	1 789	1 967	1 863
Sea Cliff village	Nassau	5 364	5 890	5 669
Seaford (CDP)	Nassau	16 117	17 379	14 718
Selden (CDP)	Suffolk	17 259	11 613	1 604
Seneca Falls village	Seneca	7 466	7 794	7 439
Setauket-East Setauket (CDP)	Suffolk	10 176	...	...
Sharon Springs village	Schoharie	514	421	351
Shelter Island (CDP)	Suffolk	1 115	...	...
Sherburne village	Chenango	1 561	1 613	1 647
Sherman village	Chautauqua	775	769	873
Sherrill city	Oneida	2 830	2 986	2 922
Shinnecock Hills (CDP)	Suffolk	2 344	...	...
Shirley (CDP)	Suffolk	18 072	*6 157	...
Shoreham village	Suffolk	555	524	164
Shortsville village	Ontario	1 669	1 516	1 382
Sidney village	Delaware	4 861	4 789	5 157
Silver Creek village	Chautauqua	3 088	3 182	3 310
Silver Springs village	Wyoming	801	823	726
Sinclairville village	Chautauqua	772	772	726
Skaneateles village	Onondaga	2 789	3 055	2 921
Sloan village	Erie	4 529	5 216	5 803
Sloatsburg village	Rockland	3 154	3 134	2 565
Smithtown (CDP)	Suffolk	30 906	...	...
Smyrna village	Chenango	225	247	286
Sodus village	Wayne	1 790	1 813	1 645
Sodus Point village	Wayne	1 334	1 172	868
Solvay village	Onondaga	7 140	8 280	8 732
Sound Beach (CDP)	Suffolk	8 071	...	...
Southampton village	Suffolk	4 080	4 904	4 582
South Corning village	Steuben	1 195	1 414	1 448
South Dayton village	Cattaraugus	661	688	696
South Fallsburg (CDP)	Sullivan	2 196	1 590	1 290
South Farmingdale (CDP)	Nassau	16 439	20 464	16 318
South Floral Park village	Nassau	1 490	1 032	1 090
South Glens Falls village	Saratoga	3 714	4 013	4 129
South Hill (CDP)	Tompkins	5 276	...	...
South Hudson Falls (CDP)	Washington	1 935	2 097	...
South Huntington (CDP)	Suffolk	14 854	9 115	7 084
South Lockport (CDP)	Niagara	3 366	1 341	...
South Nyack village	Rockland	3 602	3 435	3 113
Southold (CDP)	Suffolk	4 770	2 030	...
Southport (CDP)	Chemung	8 329	8 685	6 698
South Valley Stream (CDP)	Nassau	5 462	6 595	...
South Westbury (CDP)	Nassau	9 732	10 978	11 977
Spackenkill (CDP)	Dutchess	4 848	2 725	...
Sparrow Bush (CDP)	Orange	1 069	...	...
Speculator village	Hamilton	408	390	372
Spencer village	Tioga	863	854	767
Spencerport village	Monroe	3 424	2 929	2 461
Springs (CDP)	Suffolk	3 197	...	...
Spring Valley village	Rockland	20 537	18 112	6 538
Springville village	Erie	4 285	4 350	3 852
Staatsburg (CDP)	Dutchess	2 203	1 071	...
Stamford village	Delaware	1 240	1 286	1 166
Stannards (CDP)	Allegany	1 026	...	...
Star Lake (CDP)	St. Lawrence	1 239	...	...
Stewart (CDP)	Orange	2 797	1 220	...
Stewart Manor village	Nassau	2 373	2 183	2 422
Stillwater village	Saratoga	1 572	1 428	1 398
Stony Brook (CDP)	Suffolk	16 155	6 391	3 548

Incorporated Places Census Designated Places	Counties	1980	1970	
Stony Point (CDP)	Rockland	8 686	8 270	3
Stottville (CDP)	Columbia	1 387	1 106	
Suffern village	Rockland	10 794	8 273	5
Surrey Meadows (CDP)	Orange	1 203	...	
Sylvan Beach village	Oneida	1 243		
Syosset (CDP)	Nassau	9 818	10 084	
Syracuse city	Onondaga	170 105	*197 297	216
Tannersville village	Greene	685	650	
Tappan (CDP)	Rockland	8 267	7 424	
Tarrytown village	Westchester	10 648	11 115	11
Theresa village	Jefferson	827	985	
Thomaston village	Nassau	2 684	*2 811	2
Thornwood (CDP)	Westchester	7 197	6 874	
Ticonderoga village	Essex	2 938	3 268	3
Tillson (CDP)	Ulster	1 529	1 256	
Tivoli village	Dutchess	711	739	
Tonawanda city	Erie	18 693	21 898	2
Tonawanda (CDP)	Erie	72 795		
Town Line (CDP)	Erie	2 917	2 434	
Tribes Hill (CDP)	Montgomery	1 202	1 184	
Troy city	Rensselaer	56 638	62 918	67
Trumansburg village	Tompkins	1 722	1 803	
Tuckahoe village	Westchester	6 076	6 236	
Tully village	Onondaga	1 049	899	
Tupper Lake village	Franklin	4 478	4 854	
Turin village	Lewis	296	293	
Tuxedo Park village	Orange	809	861	
Unadilla village	Otsego	1 367	1 489	
Uniondale (CDP)	Nassau	20 016	22 077	2
Union Springs village	Cayuga	1 201	1 183	
Unionville village	Orange	574	576	
Upper Brookville village	Nassau	1 245	1 182	
Upper Nyack village	Rockland	1 906	2 096	
Utica city	Oneida	75 632	*91 373	10
Vails Gate (CDP)	Orange	3 156	...	
Valatie village	Columbia	1 492	1 288	
Valley Cottage (CDP)	Rockland	8 214	6 007	
Valley Falls village	Rensselaer	556	681	
Valley Stream village	Nassau	35 769	40 413	3
Van Etten village	Chemung	559	522	
Vernon village	Oneida	1 373	1 108	
Verona (CDP)	Oneida	1 057	...	
Victor village	Ontario	2 370	2 187	
Victory village	Saratoga	571	718	
Village of the Branch village	Suffolk	1 707	1 675	
Viola (CDP)	Rockland	5 340	5 136	
Voorheesville village	Albany	3 320	2 826	
Waddington village	St. Lawrence	980	955	
Walden village	Orange	5 659	5 277	
Wallkill (CDP)	Ulster	2 064	1 849	
Walton village	Delaware	3 329	3 744	
Walton Park (CDP)	Orange	1 475		
Wampsville village	Madison	569	586	
Wantagh (CDP)	Nassau	19 817	21 873	3
Wappingers Falls village	Dutchess	5 110	5 607	
Wappingers Falls East (CDP)	Dutchess	1 818	2 017	
Wappingers Falls North (CDP)	Dutchess	1 799		
Warrensburg (CDP)	Warren	2 834	2 743	
Warsaw village	Wyoming	3 619	3 619	
Warwick village	Orange	4 320	3 604	
Washington Heights (CDP)	Orange	1 233	1 204	
Washingtonville village	Orange	2 380	1 887	
Waterford village	Saratoga	2 405	2 879	
Waterloo village	Seneca	5 303	5 418	
Watertown city	Jefferson	27 861	30 787	
Waterville village	Oneida	1 672	1 808	
Watervliet city	Albany	11 354	12 404	
Watkins Glen village	Schuyler	2 440	2 716	
Waverly village	Tioga	4 738	5 261	
Wayland village	Steuben	1 846	2 022	
Webster village	Monroe	5 499	5 037	
Weedsport village	Cayuga	1 952	1 900	
Wellsburg village	Chemung	647	779	
Wellsville village	Allegany	5 769	5 815	
West Amityville (CDP)	Nassau	6 623	6 424	
West Babylon (CDP)	Suffolk	41 699	12 893	
West Bay Shore (CDP)	Suffolk	5 118		
Westbury village	Nassau	13 871	15 362	
West Carthage village	Jefferson	1 824	2 047	
West Elmira (CDP)	Chemung	5 485	5 901	
West End (CDP)	Otsego	1 715	1 692	
Westfield village	Chautauqua	3 446	3 651	
West Glens Falls (CDP)	Warren	5 331	3 363	
Westhampton (CDP)	Suffolk	2 774	1 156	
Westhampton Beach village	Suffolk	1 629	1 926	
West Haverstraw village	Rockland	9 181	8 558	
West Hempstead (CDP)	Nassau	18 536	20 375	
West Hills (CDP)	Suffolk	6 071		
West Hurley (CDP)	Ulster	2 382		
West Islip (CDP)	Suffolk	29 533	17 374	
Westmere (CDP)	Albany	6 881	6 364	
West Nyack (CDP)	Rockland	8 553	5 510	
Weston Mills (CDP)	Cattaraugus	1 837	-	
West Point (CDP)	Orange	8 105		
Westport village	Essex	613	673	
West Sand Lake (CDP)	Rensselaer	2 153	1 875	
West Sayville (CDP)	Suffolk	8 185	7 386	

17

Table 5. **Population of Places: 1960 to 1980**—Con.

[For changes in boundaries of incorporated places since 1970, see table 4. For meaning of symbols, see introduction]

Incorporated Places Census Designated Places	Counties	1980	1970	1960
West Seneca (CDP)	Erie	51 210	...	...
Westvale (CDP)	Onondaga	6 169	7 253	...
West Winfield village	Herkimer	979	1 018	960
Whitehall village	Washington	3 241	3 764	4 016
White Plains city	Westchester	46 999	[1]50 346	50 485
Whitesboro village	Oneida	4 460	4 805	4 784
Whitney Point village	Broome	1 093	1 058	1 049
Willard (CDP)	Seneca	1 339	...	...
Williamson (CDP)	Wayne	1 768	1 991	1 690
Williamsville village	Erie	6 017	[1]6 878	6 316
Williston Park village	Nassau	8 216	9 154	8 255
Wilson village	Niagara	1 259	1 284	1 320
Windsor village	Broome	1 155	1 098	1 026
Wolcott village	Wayne	1 496	1 617	1 641
Woodbury (CDP)	Nassau	7 043	...	...
Woodhull village	Steuben	315	313	321
Woodmere (CDP)	Nassau	17 205	19 831	14 011
Woodridge village	Sullivan	809	1 071	1 034
Woodsburgh village	Nassau	847	817	907
Woodstock (CDP)	Ulster	2 280	1 073	...
Wurtsboro village	Sullivan	1 128	732	655
Wyandanch (CDP)	Suffolk	13 215	15 716	...
Wyoming village	Wyoming	507	514	526
Yonkers city	Westchester	195 351	204 297	190 634
Yorkshire (CDP)	Cattaraugus	1 236	...	...
Yorktown Heights (CDP)	Westchester	7 696	6 805	2 478
Yorkville village	Oneida	3 115	3 425	3 769
Youngstown village	Niagara	2 191	2 169	1 848
Zena (CDP)	Ulster	1 435	...	...

5.5 USEPA Site Inspection Form 2070-13

Site Inspection Report

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

NYSDEC # 633031

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): New York Emulsion Tar Products	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Washington Street
03 CITY: Utica	04 STATE: NY; 05 ZIP CODE: 13501; 06 COUNTY: Oneida; 07 COUNTY CODE: ; 08 CONG DIST:
09 COORDINATES: LATITUDE 43° 06' 37". LONGITUDE 75° 13' 38".	10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
8/6/87 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1926 (BEGINNING YEAR) / 1983 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ______ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ______ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR URS Corporation (Name of firm) ☐ G. OTHER ______ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO
Daniel W. Rothman	Project Manager	URS Corp.	(716) 883-5525
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO**
Gregg Townsend		NYSDEC Reg.6	(315) 793-2555
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
William Fowlston	Safety Director	1911 Lorings Crossing Box 5160 Cortland, New York 13045-5160	(607) 753-6085
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	11 A.M.	Sunny, 75° F

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Daniel W. Rothman	URS Corporation	(716) 883-5525

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Kevin H. Siepel		same	same	11/11/87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER ______ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS ______
CUBIC YARDS unknown
NO. OF DRUMS ______

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Naphthalene	91-20-3	ground surface	34,300	mg/kg soil
OCC	Benzene	71-43-2	ground surface	5.40	mg/l GW

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Harbor Point Property Investigations - Land Reports - 1984-1986-
Niagara Mohawk

EPA FORM 2070-13(7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 456
02 ☒ OBSERVED (DATE: 1984 investigation) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

A number of contaminants detected just off site. Isoconcentration lines indicate site is source.

01 ☐ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: ____
02 ☐ OBSERVED (DATE: ____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or believed likely.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: ____
02 ☐ OBSERVED (DATE: ____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: ____
02 ☐ OBSERVED (DATE: ____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 18,908
02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The site is only partially fenced

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: approx 30 (Acres)
02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Northern part of approx. 64 acre Harbor Point property not considered threatened or affected

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 456
02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Approx. 120 wells within 3 mile radius, Deerfield + Marcy

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: ____
02 ☐ OBSERVED (DATE: ____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 18,946
02 ☐ OBSERVED (DATE: ____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Sum of population potentially exposed to direct contact, and those potentially subject to contaminated groundwater.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: NYSDEC 633031

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported

01 ☐ K DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (include name(s) of species)

None reported

01 ☒ L CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: ______) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Mohawk River sediments contaminated by some of substances found at perimeter of site

01 ☒ M UNSTABLE CONTAINMENT OF WASTES (Spills Runoff Standing liquids Leaking drums) — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 80,232
04 NARRATIVE DESCRIPTION

Former owner allegedly deposited tarry materials on ground, during vehicle cleaning for example.

01 ☒ N DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported

01 ☒ O CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☒ OBSERVED (DATE: 1984 Investigations) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Sewers provide preferential pathway for contaminant migration
One of most contaminated sites was at outfall of Lee Street sewer in Mohawk River

01 ☐ P ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: ______) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

Tarry wastes allegedly disposed of on or near site

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None known

III. TOTAL POPULATION POTENTIALLY AFFECTED: Approx. 80,232 people within a 3 mile radius

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Harbor Point Property Investigations-Land and River-Niagara Mohawk-1984-1986
Map supplied by Donald S. Youlen, Supervisor, Town of Deerfield to URS Corp.
Site Visit

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYSDEC #633031

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C AIR				
☐ D RCRA				
☐ E. RCRA INTERIM STATUS				
☒ F SPCC PLAN	NA	NA	NA	facility not in operation
☒ G STATE (Specify) SPDES	0007391	8/1/86	8/1/91	
☐ H LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	unknown	
☒ D. TANK, ABOVE GROUND	unknown	
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☒ I. OTHER spills (Specify)	unknown	

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

NA

05 OTHER

☒ A. BUILDINGS ON SITE

06 AREA OF SITE

2.96 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Storage tanks on site. Allegedly empty. None known to be leaking. Spills likely

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Wastes detected have mainly been spilled on ground.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

William Fowlston to Dan Rothman, Sept. 16, 1987
Site Visit

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: NY | 02 SITE NUMBER:

NYSDEC #633031

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

	ENDANGERED	AFFECTED	MONITORED
	A. ☐	B. ☐	C. ☐
	D. ☒	E. ☐	F. ☐

03 DISTANCE TO SITE

A. > 3 (mi)
B. 2.8 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING
☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available)
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 456

03 DISTANCE TO NEAREST DRINKING WATER WELL 2.8 (mi)

04 DEPTH TO GROUNDWATER 10-15 (ft)

05 DIRECTION OF GROUNDWATER FLOW North

06 DEPTH TO AQUIFER OF CONCERN 10-15 (ft)

07 POTENTIAL YIELD OF AQUIFER Unknown (gpd)

08 SOLE SOURCE AQUIFER ☒ YES ☐ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

29 Monitoring wells were installed throughout surrounding area for nearby site investigation in late 1984. Wells screen shallow intermediate and deep zones of overburden from approximately 10 to 85 ft.

10 RECHARGE AREA

☒ YES
☐ NO

COMMENTS

11 DISCHARGE AREA

XX YES
☐ NO

COMMENTS Overburden groundwater discharges to Mohawk River

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Mohawk River	☐	0.2 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 18,908 NO. OF PERSONS	B. 49,604 NO. OF PERSONS	C. 80,232 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION .05 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 13,341

04 DISTANCE TO NEAREST OFF-SITE BUILDING .05 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Site lies on northern side of City of Utica. Largely urban population around site, more densely populated to south. Site is on Erie Barge Canal, and is bordered on one side by Utica Harbor.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: NY
02 SITE NUMBER: NYSDEC #633031

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} – 10^{-8} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☒ C. 10^{-4} – 10^{-3} cm/sec ☐ D GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK: 40-85 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE: unknown (ft)

05 SOIL pH: unknown

06 NET PRECIPITATION: 14.2 (in)

07 ONE YEAR 24 HOUR RAINFALL: 2.3 (in)

08 SLOPE
SITE SLOPE: .5 %
DIRECTION OF SITE SLOPE: Variable north-east & north-west
TERRAIN AVERAGE SLOPE: 1 %

09 FLOOD POTENTIAL
SITE IS IN ______ YEAR FLOODPLAIN

10
☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)
ESTUARINE A. ______ (mi)
OTHER B. .23 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
______ (mi)
ENDANGERED SPECIES: none within 1-mile

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL: A. .05 (mi)

RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES: B. .36 (mi)

AGRICULTURAL LANDS
PRIME AG LAND: C. none within 2 miles (mi)
AG LAND: D. none within 1 mile (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Area has relatively low relief. Urban development (City of Utica) to south. Active and inactive industrial sites in vicinity of site.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

USGS Quadrangle 7.5 minute series, Utica East, N.Y.
Leonard E. Ollivett to Linda J. Clark, Aug. 18, 1987
Harbor Point Property Land Investigations-Step 3-March & May 1985

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYSDEC #633031

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE		None taken by Phase I Investigators	
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☒ AERIAL (photo copies)

02 IN CUSTODY OF URS Corporation (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS URS Corporation - 570 Delaware Avenue-Buffalo, N.Y. 14202

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	08 NAME (PARENT COMPANY (If applicable))	09 D+B NUMBER
Suit-Kote Corporation	1911		

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P O Box, RFD #, etc.)	11 SIC CODE
Lorings Crossing Rd.			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Cortland	NY	13045			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P O Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P O Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P O Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first) / IV. REALTY OWNER(S) (If applicable, list most recent first)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Koppers Products Co.			

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P O Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

William Fowlston to Dan Rothman, September 16, 1987

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Inactive	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
Suit-Kote Corp.	1911

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Lorings Crossing Road	

05 CITY	06 STATE	07 ZIP CODE
Cortland	NY	13045

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER
Koppers Products Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

William Fowlston to Dan Rothman, September 16, 1987

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Suit-Kote or Koppers	
03 STREET ADDRESS (P O Box, RFD #, etc.)	**04 SIC CODE**
see prev. page	
05 CITY	**06 STATE** / **07 ZIP CODE**

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P O Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P O Box, RFD #, etc.)	**04 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**05 CITY**	**06 STATE** / **07 ZIP CODE**
01 NAME	**02 D+B NUMBER**	**01 NAME**	**02 D+B NUMBER**
03 STREET ADDRESS (P O Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P O Box, RFD #, etc.)	**04 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**05 CITY**	**06 STATE** / **07 ZIP CODE**

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P O Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P O Box, RFD #, etc.)	**04 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**05 CITY**	**06 STATE** / **07 ZIP CODE**
01 NAME	**02 D+B NUMBER**	**01 NAME**	**02 D+B NUMBER**
03 STREET ADDRESS (P O Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P O Box, RFD #, etc.)	**04 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**05 CITY**	**06 STATE** / **07 ZIP CODE**

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Harbor Point Property Investigations-Land reports-1984-1986-Niagara Mohawk

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	

NYSDEC #633031

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R BARRIER WALLS CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ W GAS CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ X. FIRE CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ Y LEACHATE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ 1 ACCESS TO SITE RESTRICTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

01 ☐ 3 OTHER REMEDIAL ACTIVITIES 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC - Region 6

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	NYSDEC #633031

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC Region 6

EPA FORM 2070-13 (7-81)

6.0 ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

Data collected during this Phase I investigation of the New York Emulsion Tar Products site are considered inadequate in the following areas:

- o Waste characteristics:

  - Data should be developed and evaluated concerning the derivation of tars and oils found in soils on and adjacent to the site -- i.e., data indicating whether the tars and oils are coal-derived or petroleum-based.

  - Soil borings and monitoring wells should be installed on the site itself, with sampling and analysis of soil and groundwater.

6.1 APPENDIX A - DATA SOURCES AND REFERENCES

REFERENCES - DOCUMENTATION RECORDS

1. Harbor Point Property Land Investigations, Results of Extended Site Investigations, Step 3 Land Report, Niagara Mohawk Power Corporation, March 1985 (Revised May 1985).

2. Harbor Point Property River Investigations, Remedial Design Concepts, Step 4 River Report, Niagara Mohawk Power Corporation, June 1986.

3. Uncontrolled Hazardous Waste Site Ranking System, A Users Manual (HW-10), United States Environmental Protection Agency 1984, Figures 4 and 8, Tables 2, 3, 4, 5, and 9, pp. 24, 25, and 27.

4. Dangerous Properties of Industrial Materials - Sixth Edition, N. Irving Sax, Van Nostrand Reinhold Company, New York, 1984.

5. Map and Statement by Donald S. Youlen, Supervisor, Town of Deerfield, New York, October 26, 1987.

6. Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, to Russell Logalbo, Utica Board of Water Supply, September 10, 1987.

6a. Karl P. Maxwell, Supervisor, Town of Marcy, New York, to Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, November 12, 1987.

7. Robin Mangini, District Conservationist, United States Department of Agriculture, Soil Conservation Service, to Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, September 14, 1987.

8. USGS Topographic Maps, 7.5 Series: Utica East, New York, Quadrangle, 1983; Utica West, New York, Quadrangle, 1955; South Trenton, New York, Quadrangle, 1983; Oriskany, New York, Quadrangle, 1955.

9. City of Utica, Oneida County, New York - Tax Map, Sheet No. 318.08.

10. City of Utica, Oneida County, New York - Aerial Maps, Sheet Nos. 306, 318.

11. William Fowlston, Safety Director, Suit-Kote Corporation, to Daniel W. Rothman, Phase I Investigation Project Manager, URS Corporation, September 16, 1987.

12. Harbor Point Property Land Investigations, Proposal for Initial Site Survey, Step 1 Land Report, Niagara Mohawk Power Corporation, March 1984.

13. Muffett A. Mauche, Staff Engineer, LeRoy Callender, PC, telecon to James Doyle, Sanitary Engineer, NYSDEC Region 6, October 8, 1987.

14. Leonard E. Ollivett, Conservation Biologist, NYSDEC Region 6, to Linda J. Clark, Project Geologist, URS Corporation, August 18, 1987.

15. New York State Atlas of Community Water System Sources, New York State Department of Health, Division of Environmental Protection, Bureau of Public Water Supply Protection, 1982.

16. Telecon Karen A. Hartnett, URS Corporation, to Fire Chief, City of Utica, September 2, 1987.

17. 1980 Census of Population, Number of Inhabitants, New York, United States Department of Commerce, Bureau of the Census.

18. Harbor Point Property: The Mohawk River, Proposal for Initial River Survey, Step 1 River Report, Niagara Mohawk Power Corporation, March 1984.

19. William Fowlston, Safety Director, Suit-Kote Corporation, to Kenneth J. Crandall, Jr., Chief, Spill Prevention Section, Division of Water, NYSDEC, June 22, 1987.

20. Harbor Point Property Land Investigations, Results of Initial Survey, Step 2 Land Report, Niagara Mohawk Power Corporation, August 1984.

21. Geology of New York: A Short Account, New York State Museum and Science Service, Educational Leaflet No. 20, 1966.

22. Geologic Map of New York, Hudson-Mohawk Sheet, 1970.

23. New York State Geological Association Guidebook, 36th Annual Meeting, May 8-10, 1964, Department of Geology, Syracuse University.

24. Stuart E. Smith, Sr. Sanitary Engineer, NYSDEC Region 6, to James Luz, Regional Water Engineer, NYSDEC Region 6, March 11, 1985, with attachments.

25. Harbor Point Property: The Mohawk River, Results of Initial River Survey, Step 2 River Report, Niagara Mohawk Power Corporation, September 1984.

26. Miscellaneous References on Nature of Chemical Materials and Processes, various sources.

27. Climates of the States, New York, Climatography of the United States, No. 60-30, United States Department of Commerce, Weather Bureau, February 1960.

28. Inactive Hazardous Waste Disposal Site Report, with attachments, November 21, 1986.

29. Darrell Sweredoski, Sr. Sanitary Engineer, NYSDEC Region 6, to Walt Demick, July 14, 1987.

30. New York State Department of Environmental Conservation Report - Inactive Hazardous Waste Disposal Sites in New York State, Volume 6, 1989. Site Reports for: Niagara Mohawk Harbor Point Property (633021), Monarch Chemical Company, Inc. (633030), and Mohawk Valley Oil, Inc. (633032).

EPA 2070-13

REF. 18

HARBOR POINT PROPERTY: THE MOHAWK RIVER
PROPOSAL FOR INITIAL RIVER SURVEY
STEP 1 RIVER REPORT

This Privileged and Confidential Material
is on file at the offices of NYSDEC
50 Wolf Road, Albany, New York

Suit-Kote Corporation

Doing business as Central Asphalt, Cortland Asphalt Products, New York Emulsions, Northern Asphalt, and Western Bituminous Products

1911 Lorings Crossing Road
P.O. Box 5160
Cortland, N.Y. 13045-5160

REF. 19

June 22, 1987

NYSDEC
Spill Prevention Section
50 Wolf Road, Room 300
Albany, NY 12233

Attention: Mr. Kenneth J. Crandall, Jr. P.E.
Chief, Spill Prevention Section
Division of Water

Dear Mr. Crandall:

In regards to your letter of 6/12/87 to Rod Birdsall, President of Suit-Kote, I wish to explain our current position regarding the location at Utica. We ceased all operations at that plant in the fall of 1984. The following summer we removed all products and dismantled the plant.

On Wednesday, June 17, 1987, I met with a Mr. Mark Kepple of Environmental Oil at the location. The purpose of our inspection was to establish an inventory of tanks and equipment in order for Environmental Oil to present us an estimate for removal and clean up at the yard. I expect to obtain a total of three estimates on the clean up operations before we actually start the project.

I will keep you posted on our progress.

Sincerely,

Bill Fowlston

Bill Fowlston
Director of Safety and Environment

dr

REF. 20

HARBOR POINT PROPERTY LAND INVESTIGATIONS
RESULTS OF INITIAL SURVEY
STEP 2 LAND REPORT

This Privileged and Confidential Material
is on file at the offices of NYSDEC
50 Wolf Road, Albany, New York

REF. 21

Geology of New York: a short account

Adapted from the text of "Geologic Map of New York State"
by J. G. Broughton, D. W. Fisher, Y. W. Isachsen, and L. V. Rickard

EDUCATIONAL LEAFLET NO. 20

The University of the State of New York/The State Education Department
New York State Museum and Science Service/Albany 1966

21

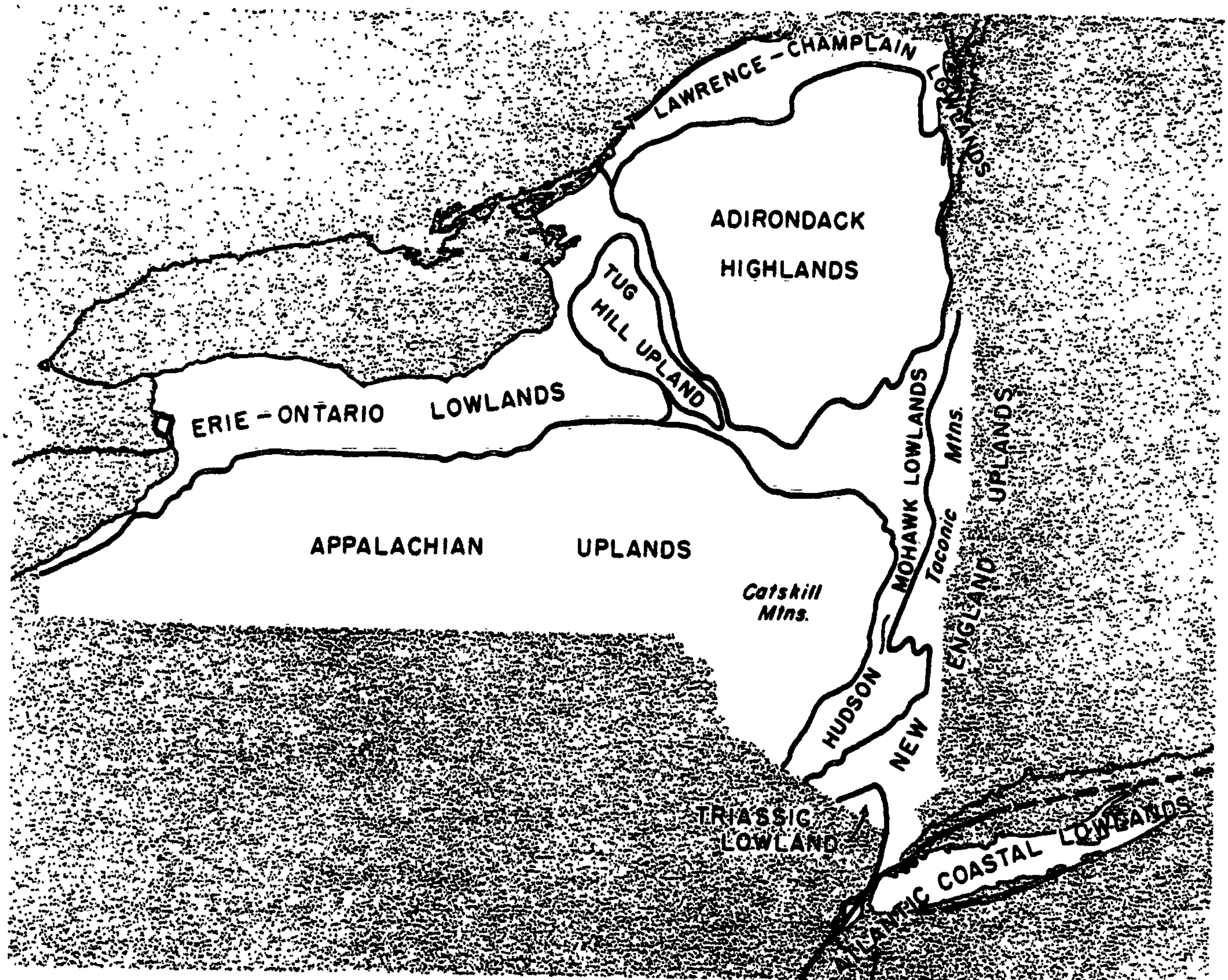


FIGURE 19. Physiographic provinces of New York, based on relief and geology (Modified after G. B. Cressey, 1952)

Cenozoic Era

PHYSIOGRAPHIC PROVINCES AND TERTIARY HISTORY

The physiographic provinces of New York are shown in figure 19. Modern landscapes of the State were shaped largely during the Cenozoic Era, the most recent 65 million years of geologic history. Although the overall features later would be modified and blurred by glaciation, the broad outlines of modern mountain, valley, and plain first were carved by the unrelenting rush of water to the earlier Cenozoic seas.

The long sequence of erosion presumably began with the arching of the Jurassic Fall Zone erosion surface in mid-Cretaceous time. As its eastern flank dipped beneath the encroaching Atlantic Ocean to receive Coastal Plain deposits, the axis domed sufficiently to initiate the sculpture of the Appalachians and Adirondacks. Few, if any of today's land forms can be traced so far back, however. Most researchers believe that all the exposed remnants of the dissected Fall Zone surface were obliterated by subsequent erosion.

South of New York, at least a partial record of Tertiary geology persists in the Coastal Plain deposits. In addition to a sedimentary record, datable igneous intrusions cut rocks of varying degrees of deformation in the western states. But in New York, no such tangible evidence of Cenozoic events exists. The Coastal Plains sediments derived from the long-continued degradation of New York and New England now rest on the Continental

21

Shelf, beneath many fathoms of water. Because of a relatively recent tilting of the coastline about a northwest-southeast axis near New York City, the Coastal Plain has been raised south of New York; east and north of the city, all but the Long Island Cretaceous has been depressed below sea level.

Since exposed Tertiary sedimentary deposits are absent in New York, its geological history must be reconstructed from the only data available, the present physiographic features of the State. In an area as small as New York, where climate does not vary significantly, land forms have been determined primarily by geology. Characteristic differences between the physiographic provinces have resulted from the ways in which rocks of differing lithologies and structures have reacted to the erosional force of the Cenozoic. Thus, while many authorities have classified New York's physiographic provinces in various ways, all are more or less in agreement as to the outlines of the major provinces; they differ mainly in the names applied to the provinces. Those used here were proposed by George B. Cressey (1952, personal communication, J.G. B.). From north to south, the physiographic provinces of New York are:

St. Lawrence-Champlain Lowlands

New York's northernmost province includes the St. Lawrence River Valley (northeast of the Thousand Islands), the low hills south of the river valley, and the Lake Champlain Valley (figure 19). The underlying rocks —Cambrian and Ordovician sandstones, dolomites, and limestones—dip gently away from the Adirondacks. Relief is approximately 100 feet. Streams draining the northern and eastern slopes of the Adirondacks flow across the province. The shoreline of Lake Champlain is largely controlled by north-south and east-west faults which have chopped the Paleozoic sandstones and carbonates into large blocks.

Adirondack Highlands

The highest mountains in New York occur in the Adirondack Highlands, especially in the High Peaks region; the High Peaks, in the east-central part of the province, are underlain by anorthosite, which is highly resistant to erosion. Two peaks—Mt. Marcy and Mt. Algonquin—are over 5,000 feet in elevation, and many exceed 4,000 feet. Average relief in the Adirondack Highlands is 2,000 feet. North, west, and south of the High Peaks area, elevations decrease gradually; east to the Champlain Lowland, the slope is more abrupt.

The Adirondacks are transected by long, northeast-southwest lineaments, representing shear zones or major faults. The lineaments frequently control drainage and the shape of land forms. Many lakes follow geologic contacts, or are confined to valleys along weak metasedimentary rocks. Because glacial deposits have clogged the normal radial drainage, lower areas are dotted with lakes, ponds, and swamps.

Tug Hill Upland

The Tug Hill, an isolated upland in the eastern part of the Erie-Ontario Lowlands, is probably the most desolate area of the State. Elevation is 1,800 to 2,000 feet, and relief is very low. The Tug Hill results from a resistant cap rock of Oswego Sandstone (an Ordovician sedimentary quartzite), resting on a thick series of sandy shales. These, in turn, overlie Trenton and Black River limestones, which form a flight of rock terraces along the west side of the Black River Valley. The low slope of the cap rock and the thin cover of glacial deposits have caused poor drainage and many swamps.

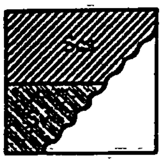
Erie-Ontario Lowlands

This province encompasses the relatively low, flat areas lying south of Lake Erie and Lake Ontario and extending up the Black River Valley. From the lake levels of 570 feet and 244 feet, respectively, the land rises gently eastward and southward. The maximum elevation (1,000-1,500 feet) occurs along the Portage Escarpment, the boundary with the Appalachian Uplands to the south. Particularly in the Ontario Lowland, east-west escarpments are formed by the Onondaga Limestone and Lockport Dolomite. (The Lockport is the cap rock of Niagara Falls and the falls of the Genesee River at Rochester.) The simple erosional topography has been modified substantially by glacial deposition of drumlin fields, recessional moraines, and shoreline deposits.

Hudson-Mohawk Lowlands

The general topography of the Hudson-Mohawk Lowlands resulted from erosion along outcrop belts of weak rocks. In the Mohawk Lowlands, the outcrop belts lie between the Adirondacks and the Helderberg Escarpment; for the Hudson, they lie between the Catskills and the metamorphosed shale hills of the Taconics. Most of the province has low elevation and relief. It is underlain primarily by Ordovician shales which have been exposed by the southward and westward stripping off of Silurian and Devonian limestones.

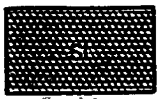
REF. 22



COBLESKILL LIMESTONE AND SALINA GROUP
0-700 ft. (0-210 m.)

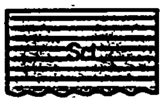
Scs Cobleskill Limestone; Bertie, Camillus, and Syracuse Formations—shale, dolostone; Brayman Shale.

Sv Vernon Shale.



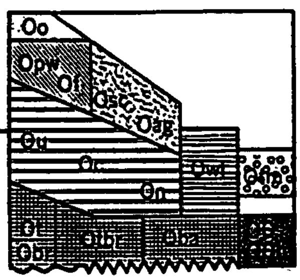
LOCKPORT GROUP
0-75 ft. (0-23 m.)

Sl Ilion Shale.



CLINTON GROUP
0-350 ft. (0-110 m.)

Scl Herkimer Sandstone including Joslin Hill and Jordanville Members; Kirkland Hematite; Willowvale Shale; Westmoreland Hematite; Sauquoit Formation—sandstone, shale; Otsquago Sandstone; Oneida Conglomerate.



BEDROCK AT SITE

LORRAINE, TRENTON, AND BLACK RIVER GROUPS
up to 4,500 ft. (1400 m.)

Oo Oswego Sandstone

Opw Pulaski and Whetstone Gulf Formations—shale, siltstone.

Of Frankfort Formation—shale, siltstone.

Osc Schenectady Formation—graywacke, sandstone, siltstone, shale.

Oag Austin Glen Formation—graywacke, shale.

Ou Utica Shale.

Oc Canajoharie Shale.

On Normanskill Shale—minor mudstone, sandstone.

GEOLOGIC MAP OF NEW YORK
1970
Hudson-Mohawk Sheet

Scale 1:250,000

5 0 5 10 15 Statute Miles 20

5 0 5 10 15 20 25 Kilometers 30

CONTOUR INTERVAL 100 FEET

Westernville
SOUTH HILL
East Floyd
Holland Patent
South Trenton
North Gage
Gravesville
Floyd
Dewey Corners
Marcy
TANNER HILL
Middleville
Fairfield
Norway
DAIRY HILL
Klondike Reservoir
FULTON
HERKIMER
Maynard
Deerfield
Yorkville
Whitesboro
Coleman
N.Y. Mills
Clark Mills
West Schuyler
HASENCLEVER HILL
Johnson Corners
Eatonville
Dolgeville
Goodell Corners
UTICA
Scl
New Hartford
Clinton
Frankfort
Frankfort Center
DUTCH HILL
Herkimer
Mohawk
Ilion
Little Falls
East Herkimer
Jacksonburg
Indian Castle
St Johnsville
MONTGOMERY
Days Rock
Paines Hollow
Newville
Nowadaga Creek
Nellis Field
Hallsville
Ft Plain
Starkville
Van Hornesville
HERKIMER CO.
OTSEGO COUNTY
HERKIMER COUNTY
MONTGOMERY COUNTY
DUGWAY GORGE
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22

NEW YORK STATE GEOLOGICAL ASSOCIATION

36th ANNUAL MEETING

MAY 8-10, 1964

GUIDEBOOK

DEPARTMENT OF GEOLOGY, SYRACUSE UNIVERSITY

GROUND-WATER RESOURCES OF THE SYRACUSE AREA[1]

by Irwin H. Kantrowitz

U.S. Geological Survey

23

All but the largest public water systems in the Syracuse area obtain their supply from wells or springs. Almost all farms and homes in rural areas are supplied by private wells or springs and many industries also rely on ground-water supplies to meet their needs. Current withdrawal of ground water in the area is believed to be only a fraction of the available supply. The quality of water, however, is not always suitable for many uses, including public supply.

Ground water occurs in fractures and bedding joints of consolidated rocks and in pore spaces of unconsolidated deposits. The quantity of water available depends on the nature of the aquifer and the source of recharge. Adequate supplies for domestic and farm needs (100 to 1,000 gallons per day) are almost always available. Larger quantities of water for industrial and public supplies can generally be obtained from stratified coarse-grained deposits and, less frequently, from bedrock with prominent fractures, particularly where these aquifers are in hydraulic contact with a surface-water body which acts as a source of recharge. Ground-water quality depends on the chemical characteristics of the aquifer material, and flow pattern within the ground-water reservoir, and the quality of the recharge water. The factors most commonly affecting the quality of the ground water in the Syracuse area are hardness, iron, hydrogen sulfide, and salinity.

Ground water in consolidated rocks

Table 1 shows the rock units in the Syracuse area, their dominant lithologies, and the quality of the ground water that may be expected in wells tapping each unit. Wells in the limestone units, and the Camillus Shale, Syracuse Salt, and Vernon Shale will yield as much as 230 gpm (gallons per minute) because of enlargement of fractures by the solution of the carbonates and evaporites. The yield of wells drilled in these units for domestic, farm, and other small supplies averages about 15 to 20 gpm. Wells in the other rock units in the area generally yield less than 10 gpm and are inadequate for most public or industrial needs.

Carbonate (temporary) hardness results from the solution of limestone or dolomite by ground water. The hardness of water in the Camillus and Vernon Shales is predominantly noncarbonate (permanent) hardness resulting from the solution of gypsum or anhydrite. The source of hydrogen sulfide is believed to be pyrite found in the Hamilton Group and the Lorraine and Utica Shales, and sphalerite found in the Lockport Dolomite. Although traces of iron are found in water from all the rock units, it is present in objectionable concentrations most often in the Camillus and Vernon Shales where it is probably related to the occurrence of hematite, siderite, and pyrite.

The presence of saline water (here defined as water containing more than 250 parts per million of chloride) is not shown in Table 1 because its occurrence is more closely related to patterns of ground-water movement than it is to

[1] Data contained in this summary were collected by the U.S. Geological Survey in cooperation with the New York State Water Resources Commission. Publication authorized by Director, U. S. Geological Survey.

the chemical characteristics of the water-bearing units. Although the only salt beds in the area are found within the Syracuse, most wells tapping this formation in its outcrop area do not yield salty water because the salt at shallow depths has been almost completely dissolved. Wells drilled into the Syracuse in the area south of its outcrop generally yield saline water, and commercial brine is obtained from deep wells in Tully Valley, about 12 miles south of Syracuse. At these wells, the salt occurs 300 to 500 feet below sea level and the brine is produced by injecting fresh water into the beds and then pumping it out after it has dissolved the salt.

The major area of natural saline-water occurrence is along the lowlands occupied by Oneida Lake and the Oneida, Oswego, and Seneca Rivers. This area coincides with the major area of ground-water discharge and the presence of saline water is believed to be due to the upward and northward movement of ground water that has been in contact with and partially dissolved the salt beds beneath the Appalachian Plateau. Wells drilled more than 100 feet into the Genesee Formation or Hamilton Group in the valleys of the plateau area may also yield saline water. The occurrence of this water may be related to connate water within the rock units or to the upward movement of water from the salt beds.

Ground water in unconsolidated deposits

A till sheet commonly about 30 feet thick mantles the entire upland area in the Appalachian and Tug Hill Plateaus and a large part of the Ontario lowland. Adequate supplies of water for domestic and farm supplies are generally available from dug wells or springs, although shallow wells on hillsides and hilltops frequently are inadequate during long dry periods.

Stratified drift mantles the remainder of the area, notably in the valleys of the Appalachian Plateau, most of the Ontario Lowland, and the lower parts of the valleys of the Tug Hill Plateau. Deposition of stratified drift occurred under four conditions: 1) proglacial deposition during free drainage, 2) deposition in ice-dammed valleys, 3) deposition during Great Lakes drainage, and 4) deposition in Lake Iroquois.

Coarse-grained glaciofluvial deposits consisting largely of sand and gravel occur south of the Valley Heads moraine and in many places form a large part of the moraine itself. The sand and gravel are well sorted and are probably the most permeable water-bearing material in the area. The city of Cortland, located about 27 miles south of Syracuse and 14 miles south of the Valley Heads moraine, pumps more than 2.5 mgd (million gallons per day) from these deposits. Somewhat similar sands and gravels, deposited during free glacial drainage in the Tug Hill Plateau area, may be expected along West Branch Fish Creek.

During deglaciation of the Appalachian Plateau, lakes existed in the major valleys, dammed between the bedrock divide to the south and the ice tongue to the north. Although data are scanty, the deposits in the valleys appear to become coarser with increasing depth which is consistent with a concept of a receding source of sediment. Small but adequate domestic and farm supplies can generally be obtained from wells dug in lacustrine sand, silt or clay, and driven screened wells are common where lacustrine sands occur at shallow depths. Because the layers of gravel in these deposits are lenticular, few wells drawing from gravel yield more than 100 gpm and the average yield of such wells is only about 30 gpm.

With further deglaciation, the ice margin was against the escarpment of the

Appalachian Plateau, and eastward drainage of the ancestral Great Lakes was initiated in ice-marginal channels. Deposition of sand and gravel occurred whereever the Great Lakes waters entered standing water in the north-south valleys or where westward recession of the ice front enabled the water to abandon the marginal channels and utilize the larger north-south valleys as outlets to the lowland north of the escarpment. These sand and gravel deposits are probably not as permeable as the valley train material south of the Valley Heads moraine. They are, nevertheless, a potential source of large ground-water supplies because they generally occur in areas where stream infiltration is possible. Examples of wells in this type of deposit are a public-supply well for the village of Fayetteville that has been test pumped at 500 gpm, and a public-supply well for the village of Chittenango that yields 350 gpm.

During the last stages of deglaciation in the Syracuse area, Lake Iroquois, a proglacial ancestral Lake Ontario, occupied the lowland north of the Appalachian escarpment. Melt-water streams deposited outwash deltas in the lake which were subsequently reworked and covered by finer grained lacustrine deposits as the ice continued to recede. The sand and gravel, where it is in hydraulic contact with a surface-water body may yield large quantities of water. The village of Fulton has pumped as much as 3.3 mgd from a well field adjacent to the Oswego River. Individual wells in this system yield as much as 800 gpm.

For the most part, none of the unconsolidated deposits in the Syracuse area have undergone significant transport by ice or melt water. Therefore, the chemical nature of the deposits and, to a large measure, the quality of the ground water derived from them, is generally similar to that of the underlying bedrock. Saline water occurs notably in a few of the north-south valleys where ground water has been able to move from the truncated salt beds of the Syracuse into relatively permeable valley-fill material.

Table 1.--Water-bearing units and quality of ground water

Rock unit	Lithologic type	Quality of water
Genesee Formation	shale	generally good
Tully Limestone	limestone	hard
Hamilton Group	shale, limestone	hard, hydrogen sulfide
Onondaga Limestone	limestone	hard
Helderberg Group	limestone	hard
Cobleskill Limestone	limestone	hard
Bertie Limestone (of Salina Group)	limestone, dolomite, some shale	hard
Camillus Shale (of Salina Group)	shale, gypsum, dolomite	hard, iron
Syracuse Salt (of Salina Group)	shale, gypsum, dolomite, salt	hard, iron
Vernon Shale (of Salina Group)	shale, some gypsum & dolomite	hard, iron
Lockport Dolomite	dolomite	hard, hydrogen sulfide
Clinton Group	sandstone & shale, some limestone	hard
Albion Group[1]	sandstone	generally good
Queenston Shale	sandstone	generally good
Oswego Sandstone	sandstone	generally good
Lorraine Shale	shale	hydrogen sulfide
Utica Shale	shale	hydrogen sulfide

[1]Approximately equivalent to Medina Group of N.Y. State Geological Survey usage.

REF. 24

New York State Department of Environmental Conservation

MEMORANDUM

TO: Jim Luz
FROM: Stuart E. Smith
SUBJECT: Sample Results R-684-045-01 & 02, New York Emulsions (Koppers), Utica (C), Oneida County
DATE: March 11, 1985

On 29 November 1984, I took a sample (-01) of tar from the ground beside a tar tank on the subject property. The tank was on the NE side of the property, near the dyke, near the chain-link fence line which is on the Emulsions/Niagara Mohawk property line. A second sample (-02) was taken on the Niagara Mohawk property some 5-10 feet from the fence.

The analytical results are attached. The most significant parameters present in the samples were

naphthalene
2-methylnaphthalene

at about the same concentration in each sample.

The results suggest that the sample collected on Niagara Mohawk property may have originated from the New York Emulsions property, provided that property ownership has not been changed over the last 10 to 15 years. The tar tank (sample -01) was last used about 10 years ago, according to Jim Cromie, a New York Emulsions employee.

Stuart E. Smith

Stuart E. Smith, P. E.
Sr. Sanitary Engineer
Region 6 - Utica

Att.
SES:m
cc: John Kenna, w/attachments

GCA/TECHNOLOGY DIVISION
A DIVISION OF GCA CORPORATION
Bedford, Massachusetts 01730

CERTIFICATION

STATE OF MASSACHUSETTS)
COUNTY OF MIDDLESEX)ss:

I, Deborah McGrath, Analytical Chemist and Operations Manager of the Laboratory Analysis Department of GCA/Technology Division, an Analytical Laboratory, do hereby certify that the annexed item is a true and correct copy of an original Analytical Laboratory report, Identification No. GCA 5-668-073, the transmission letter of which is dated 19 February 1985.

The original of this report is on file in the Analytical Laboratory located at 213 Burlington Road, Bedford, MA 01730.

Deborah McGrath
Analytical Chemist
Operations Manager
Laboratory Analysis Dept.

Sworn to before me this
19th day of February 1985.

Paul G. Merrill
Notary Public

My Commission Expires: 12/27/85

Contractor GCA/Technology Division NYDEC Contract # C000678.

Narrative For GCA 5-668-073

SAMPLE RECEIPT

1. Two (2) samples were received by GCA/Technology Division on December 18, 1984. The requested analyses for the individual samples are provided in Table 1.

2. Upon receipt, the submitted samples were entered in the Master Log Book and assigned GCA Control Numbers as presented in Table 1.

ANALYTICAL PROCEDURES

1. A 0.5 gram aliquot of each sample was diluted in methylene chloride for GC/MS analysis. Both sample aliquots required dilution with 1000 ml of solvent in order to provide a free-flowing solution suitable for injection. Analysis was performed using GC/MS techniques as specified in EPA Method 625. The results of analyses are provided on the attached Data Report Sheets. Also provided are copies of the reconstructed ion chromatograms (RICs) which have been labeled for internal standards.

QUALITY CONTROL

1. Quality control samples appropriate for this analysis are not available, therefore none were analyzed. Surrogate spiking was not performed because the samples required a large diluent volume.

TABLE 1. CROSS REFERENCE LIST OF SUBMITTED SAMPLES

GCA Control No.	Sample Receipt	Sample Matrix	Sample Identification	Requested Analyses
42239	12/18/84	Tar	R-684-045-01	Base/Neutral and Acid Extractable Organics
42240			R-684-045-02	

24

Project 5-668-073 GCA Control No. 42239

DATA REPORT SHEET

Base/Neutral Extractables (Page 1 of 2)

Sample I.D. R-684-045-01 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Parameter	Ion Used To Quantitate	Concentration (mg/kg)
N-nitrosodimethylamine		ND
bis(chloromethyl)ether		ND
bis(2-chloroethyl)ether		ND
1,3-dichlorobenzene		ND
1,4-dichlorobenzene		ND
1,2-dichlorobenzene		ND
bis(2-chloroisopropyl)ether		ND
N-nitrosodi-n-propylamine		ND
hexachloroethane		ND
nitrobenzene		ND
isophorone		ND
bis(2-chloroethoxy)methane		ND
1,2,4-trichlorobenzene		ND
naphthalene	128	12000
hexachlorobutadiene		ND
hexachlorocyclopentadiene		ND
2-chloronaphthalene		ND
dimethyl phthalate		ND
acenaphthylene		ND
2,6-dinitrotoluene		ND
acenaphthene		ND
2,4-dinitrotoluene		ND**
diethyl phthalate		ND
fluorene		ND*
4-chlorophenyl phenyl ether		ND
N-nitrosodiphenylamine		ND
1,2-diphenylhydrazine		ND
4-bromophenyl phenyl ether		ND*
hexachlorobenzene		ND*
phenanthrene/anthracene[a]		ND
di-n-butyl phthalate		ND

ND = < 10,000 mg/kg
ND* = < 40,000 mg/kg
ND** = < 100,000 mg/kg

GCA CORPORATION
Technology Division

Project 5-668-073 GCA Control No. 42239

DATA REPORT SHEET

Base/Neutral Extractables (Page 2 of 2)

Sample I.D. R-684-045-01 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Parameter	Ion Used To Quantitate	Concentration (mg/kg)
fluoranthene		ND*
benzidine		ND**
pyrene		ND
butyl benzyl phthalate		ND*
3,3′-dichlorobenzidine		ND*
benzo(a)anthracene/chrysene[a]		ND
bis(2-ethylhexyl)phthalate		ND
di-n-octyl phthalate		ND*
benzo(b)fluoranthene/benzo(k)fluoranthene[a]		ND*
benzo(a)pyrene		ND*
indeno(1,2,3-cd)pyrene		ND*
dibenzo(a,h)anthracene		ND*
benzo(g,h,i)perylene		ND*
2,3,7,8-tetrachlorodibenzo-p-dioxin		ND**

ND = < 10,000 mg/kg
ND* = < 40,000 mg/kg
ND** = < 100,000 mg/kg

[a]Under the conditions stipulated by EPA Method 625 this compound pair cannot be chromatographically resolved. The concentration reported reflects the total of both isomers.

GCA CORPORATION
Technology Division

24

Project 5-668-073 GCA Control No. 42239

DATA REPORT SHEET

Acid Extractables

Sample I.D. R-684-045-01 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Parameter	Ion Used To Quantitate	Concentration (mg/kg)
phenol		ND
2-chlorophenol		ND
2-nitrophenol		ND
2,4-dimethylphenol		ND
2,4-dichlorophenol		ND
4-chloro-3-methylphenol		ND
2,4,6-trichlorophenol		ND
2,4-dinitrophenol		ND**
2-methyl-4,6-dinitrophenol		ND**
4-nitrophenol		ND**
pentachlorophenol		ND**

ND = < 10,000 mg/kg
ND** = < 100,000 mg/kg

GCA CORPORATION
Technology Division

Project 5-668-073 GCA Control No. 42239

DATA REPORT SHEET

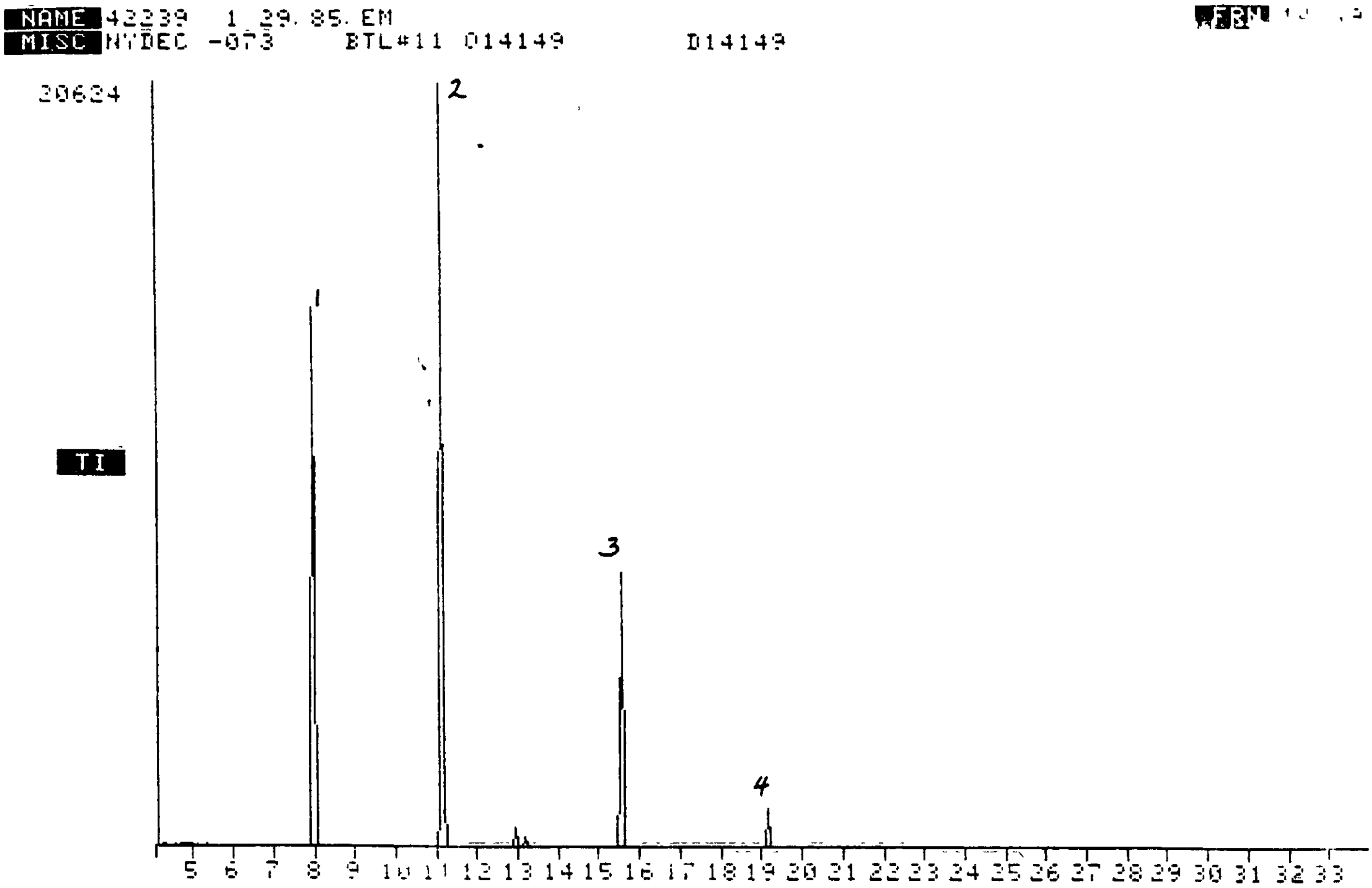
Extractables Qualitative Analysis

Sample I.D. R-684-045-01 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Compound	CAS No.	Concentration* (mg/kg)
2-methylnaphthalene	91-57-6	10,000

*Concentration based on a comparison of the total ion area of the compound with that of the internal standard.



1 = D_4-1,4-dichlorobenzene

2 = D_8-naphthalene

3 = D_{10}-acenaphthene

4 = D_{10}-phenanthrene

(24)

Project 5-668-073 GCA Control No. 42240

DATA REPORT SHEET

Base/Neutral Extractables (Page 1 of 2)

Sample I.D. R-684-045-02 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Parameter	Ion Used To Quantitate	Concentration (mg/kg)
N-nitrosodimethylamine		ND
bis(chloromethyl)ether		ND
bis(2-chloroethyl)ether		ND
1,3-dichlorobenzene		ND
1,4-dichlorobenzene		ND
1,2-dichlorobenzene		ND
bis(2-chloroisopropyl)ether		ND
N-nitrosodi-n-propylamine		ND
hexachloroethane		ND
nitrobenzene		ND
isophorone		ND
bis(2-chloroethoxy)methane		ND
1,2,4-trichlorobenzene		ND
naphthalene	128	19000
hexachlorobutadiene		ND
hexachlorocyclopentadiene		ND
2-chloronaphthalene		ND
dimethyl phthalate		ND
acenaphthylene		ND
2,6-dinitrotoluene		ND
acenaphthene		ND
2,4-dinitrotoluene		ND**
diethyl phthalate		ND
fluorene		ND
4-chlorophenyl phenyl ether		ND*
N-nitrosodiphenylamine		ND
1,2-diphenylhydrazine		ND
4-bromophenyl phenyl ether		ND*
hexachlorobenzene		ND*
phenanthrene/anthracene[a]		ND
di-n-butyl phthalate		ND

ND = < 10,000 mg/kg
ND* = < 40,000 mg/kg
ND** = < 100,000 mg/kg

GCA CORPORATION
Technology Division

24

Project 5-668-073

GCA Control No. 42240

DATA REPORT SHEET

Base/Neutral Extractables (Page 2 of 2)

Sample I.D. R-684-045-02 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Parameter	Ion Used To Quantitate	Concentration (mg/kg)
fluoranthene		ND*
benzidine		ND**
pyrene		ND
butyl benzyl phthalate		ND*
3,3′-dichlorobenzidine		ND*
benzo(a)anthracene/chrysene[a]		ND
bis(2-ethylhexyl)phthalate		ND
di-n-octyl phthalate		ND*
benzo(b)fluoranthene/benzo(k)fluoranthene[a]		ND*
benzo(a)pyrene		ND*
indeno(1,2,3-cd)pyrene		ND*
dibenzo(a,h)anthracene		ND*
benzo(g,h,i)perylene		ND*
2,3,7,8-tetrachlorodibenzo-p-dioxin		ND**

ND = < 10,000 mg/kg
ND* = < 40,000 mg/kg
ND** = < 100,000 mg/kg

[a]Under the conditions stipulated by EPA Method 625 this compound pair cannot be chromatographically resolved. The concentration reported reflects the total of both isomers.

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Project 5-668-073

GCA Control No. 42240

DATA REPORT SHEET

Acid Extractables

Sample I.D. R-684-045-02 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Parameter	Ion Used To Quantitate	Concentration (mg/kg)
phenol		ND
2-chlorophenol		ND
2-nitrophenol		ND
2,4-dimethylphenol		ND
2,4-dichlorophenol		ND
4-chloro-3-methylphenol		ND
2,4,6-trichlorophenol		ND
2,4-dinitrophenol		ND**
2-methyl-4,6-dinitrophenol		ND**
4-nitrophenol		ND**
pentachlorophenol		ND**

ND = < 10,000 mg/kg
ND** = < 100,000 mg/kg

24

Project 5-668-073 GCA Control No. 42240

DATA REPORT SHEET

Extractables Qualitative Analysis

Sample I.D. R-684-045-02 Analysis Date 1/29/85

Sample Matrix Tar Instrument HP 5985 GC/MS

Compound	CAS No.	Concentration* (mg/kg)
2-Methylnaphthalene	91-57-6	10,000

*Concentration based on a comparison of the total ion area of the compound with that of the internal standard.

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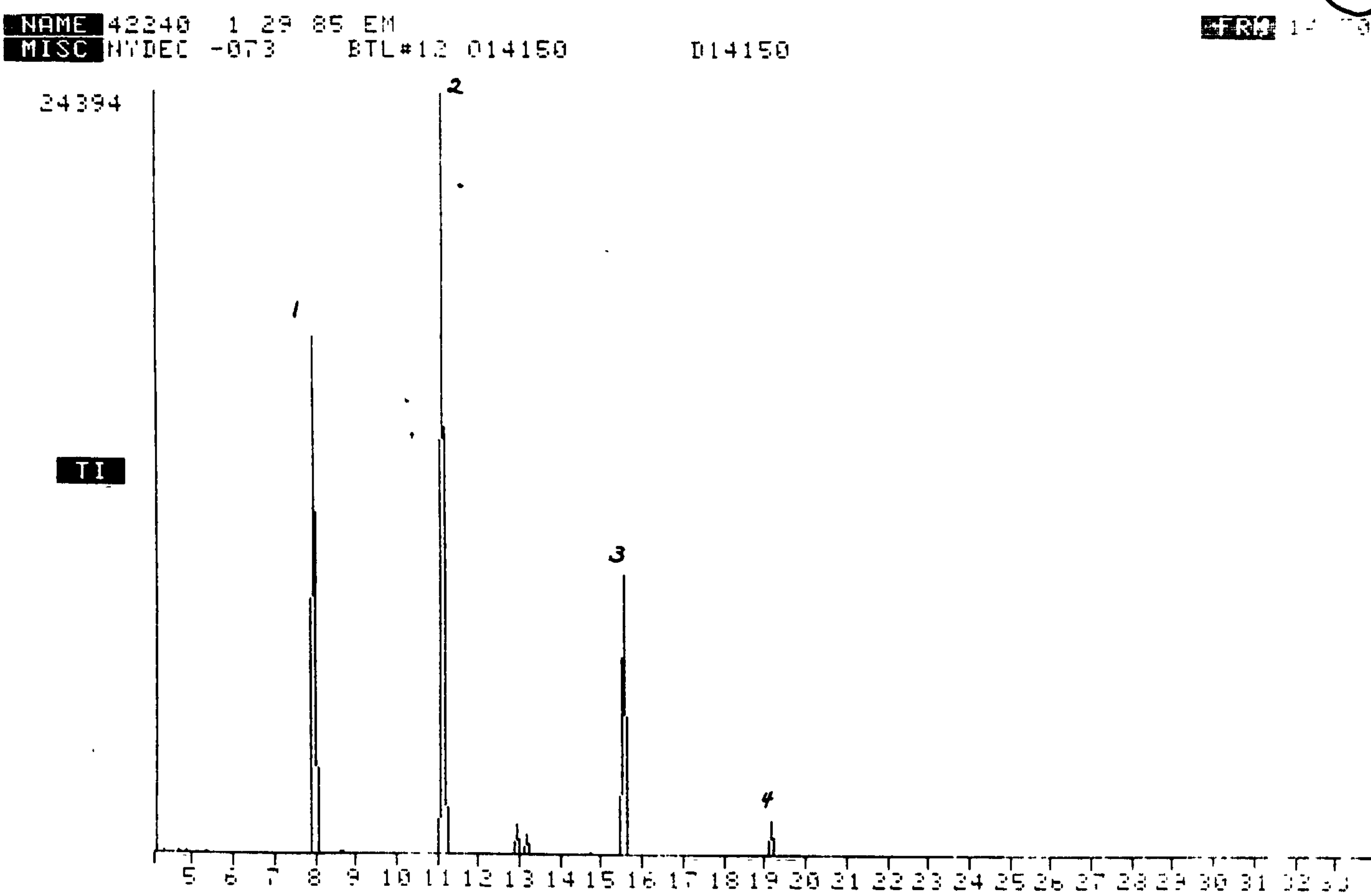


1 = D_4-1,4-dichlorobenzene

2 = D_8-naphthalene

3 = D_{10}-acenaphthene

4 = D_{10}-phenanthrene

REF. 25

HARBOR POINT PROPERTY: THE MOHAWK RIVER
RESULTS OF INITIAL RIVER SURVEY
STEP 2 RIVER REPORT

This Privileged and Confidential Material
is on file at the offices of NYSDEC
50 Wolf Road, Albany, New York

REF. 26

rally occurring nonessential amino acid. The common form is L(+)-aspartic acid. Nontoxic.
Properties: Colorless crystals; soluble in water; insoluble in alcohol and ether; optically active.
DL-aspartic acid: M.p. 278–280°C with decomposition; sp. gr. 1.663 (12/12°C).
L(+)-aspartic acid: M.p. 251°C.
D(–)-aspartic acid: M.p. 269–271°C with decomposition; sp. gr. 1.6613.
Source: Young sugar cane; sugar beet molasses.
Derivation: Hydrolysis of protein; reaction of ammonia with diethyl fumarate.
Uses: Biological and clinical studies; preparation of culture media; organic intermediate; dietary supplement; detergents; fungicides; germicides; metal complexation; synthetic sweetener base (L-form).
Available commercially as D(–)-, L(+)-, and DL-aspartic acid.

aspartocin. USAN for antibiotic produced by Streptomyces griseus.

aspergillic acid $C_{12}H_{20}N_2O_2$. 2-Hydroxy-3-isobutyl-6-(1-methylpropyl)pyrazine 1-oxide. An antibiotic from strains of Aspergillus flavus. Nontoxic.
Properties: Solid. M.p. 97°C; insoluble in cold water; soluble in common organic solvents and dilute acids. Hydrochloride melts at 178°C and is soluble in water.

asphalt (petroleum asphalt, Trinidad pitch, mineral pitch). A dark-brown to black cementitious material, solid or semisolid in consistency, in which the predominating constituents are bitumens, which occur in nature as such or are obtained as residua in petroleum refining (ASTM). It is a mixture of paraffinic and aromatic hydrocarbons and heterocyclic compounds containing sulfur, nitrogen, and oxygen.
Properties: Black solid or viscous liquid; sp. gr. about 1.0; soluble in carbon disulfide. Flash point 450°F; autoignition temp. 900°F; solid softens to viscous liquid at about 200°F; penetration value (paving) 40–300 (roofing) 10–40. Good electrical resistivity. Combustible; low toxicity.
Occurrence: California, Trinidad, Venezuela, Cuba, Canada (Athabasca tar sands).
Containers: Drums, barrels, tank trucks, tank cars.
Uses: Paving and road-coating; roofing; sealing and joint filling; special paints; adhesive in electrical laminates and hot-melt compositions; diluent in low-grade rubber products; fluid loss control in hydraulic fracturing of oil wells; medium for radioactive waste disposal; pipeline and underground cable coating; rust-preventive hot-dip coatings; base for synthetic turf; water-retaining barrier for sandy soils; supporter of rapid bacterial growth in converting petroleum components to protein.
See also bacteria; protein; asphalt, blown.

asphalt, blown (mineral rubber, oxidized asphalt, condensed asphalt). Black, friable solid obtained by blowing air at high temperature through petroleum-derived asphalt, with subsequent cooling. Penetration value 10–40; softening point 185–250°F. Combustible. Uses are primarily roofing, as diluent in low-grade rubber products, and as thickener in oil-based drilling fluids. Shipped in 55-gal. metal drums. For further information on asphalt, refer to the Asphalt Institute, 1270 Avenue of the Americas, New York, N.Y.

asphalt, cut-back. A liquid petroleum product, produced by fluxing an asphaltic base with suitable distillates. (A.S.T.M.)
Properties: Flash point (open cup) 50°F. Solubility of residue from distillation in carbon tetrachloride 99.5%.
Hazard: Flammable, dangerous fire hazard.
Use: Road surfaces.
Shipping regulations: (Rail) Red label. (Air) Flammable Liquid label.

asphaltene. A component of the bitumen in petroleums, petroleum products, malthas, asphalt cements, and solid native bitumens, soluble in carbon disulfide but insoluble in paraffin naphthas. (A.S.T.M.)

asphalt, liquid. See residual oil; asphalt.

asphalt, oxidized. See asphalt, blown.

asphalt paint. Asphaltic base in a volatile solvent with or without drying oils, resisns, fillers, and pigments. Ground asbestos is frequently used as a component of heavy asphaltic paints for roofing and waterproofing purposes.
Hazard: Flammable; dangerous fire risk.

asphyxiant gas. A gas which has little or no positive toxic effect but which can bring about unconsciousness and death by replacing air and thus depriving an organism of oxygen. Among the so-called asphyxiant gases are carbon dioxide, nitrogen, helium, methane, and other hydrocarbon gases.

aspidospermine $C_{22}H_{30}O_2N_2$.
Properties: White to brownish-yellow crystalline alkaloid. M.p. 108°C; b.p. 200°C (1 to 2 mm); sublimes at 180°C under reduced pressure. Soluble in fats and fixed oils; sparingly soluble in absolute alcohol and ether. Its sulfate and hydrochloride are soluble in water.
Hazard: Moderately toxic by ingestion.
Use: Medicine.

aspirin (acetylsalicylic acid; ortho-acetoxybenzoic acid). $CH_3COOC_6H_4COOH$.
Properties: White crystals or white, crystalline powder. Odorless; slightly bitter taste. Stable in dry air; slowly hydrolyzes in moist air to salicylic and acetic acids. Soluble in water, alcohol, chloroform, and ether; less soluble in absolute ether. Dissolves with decomposition in solutions of alkali hydroxides and carbonates. M.p. 132–136°C; b.p. 140°C (dec.).
Derivation: Action of acetic anhydride on salicylic acid.
Method of purification: Crystallization.
Grades: Technical, U.S.P.
Containers: 25-lb boxes; 25-, 100-, 250-lb drums.
Hazard: An allergen; may cause local bleeding, especially of the gums; 10-gram dosage may be fatal. Dust dispersed in air is serious explosion risk.
Use: Medicine (anodyne).

"Aspon."[1] Trademark for a concentrate of tetra-n-propyl dithionopyrophosphate, a liquid insecticide.

assay. Determination of the content of a specific component of a mixture, with no evaluation of other components. Such determinations are made on ores of various metals (especially precious metals), on pharmaceutical products to validate the amount of drug present in a given unit, and on organisms (bacteria) to determine their reactions to an antibiotic or insecticide. The latter procedure is called bioassay. Ores are assayed by heat fractionation, organic materials by solvent extraction and chemical separation.

assistant. A term loosely used in the textile industry for any chemical compound that aids in a processing step, e.g., scouring, dyeing, bleaching, finishing, etc. See also auxiliary; dyeing assistant.

"Bentolite."[471] Trademark for a series of white bentonites from Texas.
Grades: H and L, high and low gelling.
Uses: Suspending agent; thixotropic agent; adhesives; ceramic bonding and plasticizing agent; desiccant; medicated powders.

"Bentone."[304] Trademark for organic derivatives of hydrous magnesium aluminum silicate minerals.
Uses: Gelling and pigment-suspending agents.

bentonite. A colloidal clay (aluminum silicate) composed chiefly of montmorillonite. There are two varieties: (1) sodium bentonite (Wyoming or western), which has high swelling capacity in water; and (2) calcium bentonite (southern), with negligible swelling capacity.
Properties: (Wyoming) Light to cream-colored impalpable powder; forms colloidal suspension in water, with strongly thixotropic properties. Nontoxic; noncombustible.
Occurrence: Wyoming; Mississippi; Texas; Canada; Italy; U.S.S.R.
Containers: Paper bags; drums; bulk carloads.
Uses: Oil-well drilling fluids; cement slurries for oil-well casings; bonding agent in foundry sands and pelletizing of iron ores; sealant for canal walls; thickener in lubricating greases and fireproofing compositions; cosmetics; decolorizing agent; filler in ceramics, refractories, paper coatings; asphalt modifier; polishes and abrasives; food additive; catalyst support. See also clay.

"Benzahex."[147] Trademark for a group of insecticides containing gamma-benzene hexachloride.
Hazard: See benzene hexachloride.

benzalacetone. See benzylidene acetone.

benzalazine (benzylidene azine) $C_6H_5CH{:}NN{:}CHC_6H_5$.
Properties: Yellow crystals; m.p. 91–93°C; insoluble in cold water; soluble in benzene and hot alcohol.
Uses: Stabilizer; polymerization catalyst; ultraviolet absorbent; reagent and intermediate.

benzal chloride. See benzyl dichloride.

benzaldehyde (benzoic aldehyde; synthetic oil of bitter almond) C_6H_5CHO.
Properties: Colorless or yellowish, strongly refractive, volatile oil with odor resembling oil of bitter almond, and burning aromatic taste; oxidizes readily; miscible with alcohol, ether, fixed and volatile oils; slightly soluble in water. Sp. gr. 1.0415 (25/4°C; refractive index (20°C) 1.5440–1.5464; f.p. -56°C; b.p. 178°C. Flash point 145°F (C.C.). Oxidizes in air to benzoic acid. Combustible. Autoignition temp. 377°F.
Derivation: (a) Air oxidation of toluene with uranium or molybdenum oxides as catalysts; (b) chlorination of toluene with hydrolysis by acid or alkali.
Impurities: Usually chlorine derivatives.
Method of purification: Rectification.
Grades: Technical; N.F.. Note: The specifications, especially regarding impurities, vary considerably for the grades used for dye manufacture from those used in perfumery.
Containers: Tins; carboys; drums; tank cars.
Hazard: Moderately toxic by ingestion.
Uses: Chemical intermediate for dyes, flavoring materials, perfumes, and aromatic alcohols; solvent for oils, resins, some cellulose ethers, cellulose acetate and nitrate; flavoring compounds; synthetic perfumes; manufacture of cinnamic acid, benzoic acid; pharmaceuticals; photographic chemicals.
See also oil of bitter almond.

benzaldehyde cyanohydrin. See mandelonitrile.

benzaldehyde green. See malachite green.

benzalkonium chloride. A mixture of alkyl dimethylbenzylammonium chlorides of general formula $C_6H_5CH_2N(CH_3)_2RCl$ in which R is a mixture of the alkyls from C_8H_{17} to $C_{18}H_{37}$. It is a typical quaternary ammonium salt.
Properties: White or yellowish-white, amorphous powder or gelatinous pieces. Aromatic odor and very bitter taste; soluble in water, alcohol or acetone; almost insoluble in ether; slightly soluble in benzene. Water solutions foam strongly when shaken and are alkaline to litmus.
Grade: U.S.P.
Hazard: Toxic by ingestion and skin absorption
Uses: Cationic detergent; surface antiseptic, fungicide.

benzamide (benzoylamide) $C_6H_5CONH_2$.
Properties: Colorless crystals; m.p. 130°C, b.p. 288°C; sp. gr. 1.341. Soluble in hot water, hot benzene, alcohol, and ether. Combustible.
Derivation: From benzoyl chloride and ammonia or ammonium carbonate.
Grades: Technical.
Uses: Organic synthesis.

benzaminoacetic acid. See hippuric acid.

benzanilide (benzoylaniline; phenylbenzamide) $C_6H_5NH(COC_6H_5)$.
Properties: White to reddish crystals and powder, closely related to acetanilide, containing benzoyl in place of acetyl radical. Sp. gr. 1.306; m.p. 160–162°C. Soluble in alcohol; insoluble in water; slightly soluble in ether.
Derivation: From benzoic anhydride and aniline with caustic soda.
Uses: Intermediate in the synthesis of dyes, drugs and perfumes.

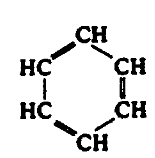
benzanthrone $C_{17}H_{10}H$, a four-ring system.
Properties: Pale yellow needles; soluble in alcohol and other organic solvents. M.p. 170°C.
Derivation: (a) From anthranol and glycerol by condensation by means of sulfuric acid (anthranol is made from anthraquinone); (b) from anthracene in sulfuric acid solution by addition of glycerol and heating to 100–110°C until the anthracene disappears. The reaction mass is then diluted with water, salted out and purified.
Method of purification: Crystallization from toluene.
Use: Dyes.

benzathine penicillin G (N,N'-dibenzylethylenediamine dipenicillin G) $2C_{16}H_{18}N_2O_4S \cdot C_{16}H_{20}N_2 \cdot 4H_2O$.
Properties: White, odorless, crystalline powder; slightly soluble in alcohol; practically insoluble in water; pH of a saturated solution is 4.5–7.5.
Grade: U.S.P.
Use: Medicine (antibiotic).

benzazimide. See 4-ketobenzotriazine.

"Benzedrine."[71] Trademark for amphetamine sulfate.

benzene C_6H_6. Thirteenth in order of high-volume chemicals produced in U.S. (1975).



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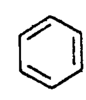


II

ı. S[redacted] mandelonitrile.
mal[redacted]ite green.
A mixture of alkyl dimethyl-
orid[redacted] of general formula
n w[redacted]h R is a mixture of the
H[redacted]t is a typical quaternary

yellowish-white, amorphous
ieces. Aromatic odor and very
wat[redacted] alcohol or acetone; al-
; sl[redacted]tly soluble in benzene.
tro[redacted]y when shaken and are

ion [redacted]d skin absorption.
; su[redacted]ce antiseptic; fungicide.
) $C_6H_5CONH_2$.
stals; m.p. 130°C; b.p. 288°C;
in h[redacted] water, hot benzene, al-
oust[redacted]e.
oyl [redacted]oride and ammonia or

e hi[redacted]uric acid.
ne; [redacted]nylbenzamide)

eddi[redacted] crystals and powder,
anil[redacted], containing benzoyl in
Sp. [redacted] 1.306; m.p. 160–162°C.
solu[redacted] in water; slightly sol-

ic anhydride and aniline with

e sy[redacted]hesis of dyes, drugs and

four-ring system.
need[redacted]; soluble in alcohol and
M.[redacted] 170°C.
nthr[redacted]ol and glycerol by con-
of s[redacted]uric acid (anthranol is
one); (b) from anthracene in
by [redacted]dition of glycerol and
ur[redacted] the anthracene disap-
ass [redacted]hen diluted with water,

Crystallization from toluene.

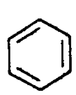
N,N[redacted]ibenzylethylenediamine
N2C[redacted] · $C_{16}H_{20}N_2 \cdot 4H_2O$.
lorless, crystalline powder;
ohol; practically insoluble in
d s[redacted]tion is 4.5–7.5.

c).

enzotriazine.

rk f[redacted] amphetamine sulfate.

ath [redacted] order of high-volume
U.S[redacted]1975).



II

III IV

Structure: I. Complete ring showing all elements.
II. Standard ring showing double bonds only.
III. Simple ring without double bonds, with numerals indicating position of carbon atoms to which substituent atoms or groups may be attached (2 = ortho, 3 = meta, 4 = para).
IV. Generalized structure, with enclosed circle suggesting the resonance of this compound.

These structures are also referred to as the benzene nucleus.

Properties: Colorless to light-yellow, mobile, nonpolar liquid of highly refractive nature; aromatic odor; vapors burn with smoky flame; b.p. 80.1°C; m.p. 5.5°C; sp. gr. 0.8790 (20/4°C); wt/gal 7.32 lb; refractive index (n 20/D) 1.50110; flash point (closed cup) 12°F; surface tension 29 dynes/cm. Autoignition temp. 1044°F. Miscible with alcohol, ether, acetone, carbon tetrachloride, carbon disulfide, acetic acid; slightly soluble in water.

Derivation: (a) Hydrodealkylation of toluene or of pyrolysis gasoline (q.v.); (b) transalkylation of toluene by disproportionation reaction; (c) catalytic reforming of petroleum; (d) fractional distillation of coal tar.

Grades: Crude; straw color; motor; industrial pure (2°C); nitration (1°C); thiophene-free; 99 mole %; 99.94 mole %; nanograde.

Containers: Drums; tank cars; barges.

Hazard: Flammable, dangerous fire risk. Explosive limits in air, 1.5 to 8% by volume. Toxic by ingestion, inhalation, and skin absorption. Tolerance, 25 ppm in air. Safety data sheet available from Manufacturing Chemists Assn., Washington, D.C.

Uses: Ethylbenzene (for styrene monomer); dodecylbenzene (for detergents); cyclohexane (for nylon); phenol; nitrobenzene (for aniline); maleic anhydride; dodecylbenzene; chlorobenzene; diphenyl; benzene hexachloride; benzene-sulfonic acid; solvent; antiknock gasoline.

Shipping regulations: (Rail) Red label. (Air) Flammable Liquid label.

See also aromatic.

benzene azimide. See 1,2,3-benzotriazole.

benzeneazoanilide. See diazoaminobenzene.

benzeneazobenzene. See azobenzene.

benzeneazo-para-benzeneazo-beta-naphthol ("Sudan" III, tetraazobenzene-beta-naphthol) $C_6H_5NNC_6H_4$-4-NN-1-$C_{10}H_6$-2-OH. A red dye; C.I. 26100.
Properties: Brown powder; m.p. 195°C; insoluble in water; soluble in alcohol and oils.
Uses: Coloring oils red; biological stain.

benzeneazonaphthylethylenediamine. See azodine.

benzenecarboxylic acid. See benzoic acid.

benzenediazonium chloride $C_6H_5N(N)Cl$.
Properties: Ionic salt. Very soluble in water; insoluble in most organic solvents.
Hazard: Explodes on heating.

Use: Dye intermediate.
Shipping regulations: Not listed. Consult authorities.

benzene dibromide. See dibromobenzene.

benzene-ortho-dicarboxylic acid. See phthalic acid.

benzene-para-dicarboxylic acid. See terephthalic acid.

benzene hexachloride (BHC). A commercial mixture of isomers of 1,2,3,4,5,6-hexachlorocyclohexane (q.v.). insecticide. The gamma isomer is toxic. Use may be restricted. See also lindane.

benzenemonosulfonic acid. See benzenesulfonic acid.

benzenephosphinic acid (phenylphosphinic acid) $C_6H_5H_2PO_2$.
Properties: Colorless crystals; m.p. 82–84°C; sp. gr. 1.376 (29°C). Decomposes at 200°C. Stable in air. Soluble in water, alcohol, acetone. Slightly soluble in ether; insoluble in benzene, hexane, carbon tetrachloride. Combustible.
Containers: 100-lb fiber drums
Uses: Antioxidant; intermediate for metallic salt formation; accelerator for organic peroxide catalysts.

benzenephosphonic acid (phenylphosphonic acid) $C_6H_5H_2PO_3$.
Properties: Colorless crystals. M.p. 158°C; sp. gr. 1.475 (4°C); decomposes at 275°C; soluble in water, alcohol, carbon tetrachloride. Combustible.
Containers: 100-lb fiber drums.
Uses: Intermediate in antifouling paint agents; catalyst in organic reactions.

benzenephosphorus dichloride $C_6H_5PCl_2$.
Properties: Highly reactive colorless liquid. M.p. −51°C; b.p. 224.6°C; sp. gr. 1.315 (25°C); refractive index 1.5958 (n 25/D). Soluble in common inert organic solvents; fumes in air; hydrolyzes in water.
Containers: 55-gal stainless steel drums
Hazard: Flammable; corrosive to skin and tissue.
Uses: Organic synthesis, for derivation of plasticizers, polymers, antioxidants; oil additives.
Shipping regulations: (Rail) Red label. (Air) Corrosive label. Not acceptable on passenger planes.

benzenephosphorus oxydichloride $C_6H_5POCl_2$.
Properties: Reactive colorless liquid. M.p. 3.0°C; b.p. 258°C; sp. gr. 1.197 (25°C); refractive index 1.5585 (n 25/D). Soluble in common inert organic solvents; hydrolyzes in water. Combustible.
Containers: 55-gal nickel drums.
Hazard: Strong irritant to skin.
Uses: Organic synthesis, for derivation of plasticizers, polymers, antioxidants, oil additives.

benzenesulfonic acid (benzenemonosulfonic acid; phenylsulfonic acid) $C_6H_5SO_3H$.
Properties: Fine, deliquescent needles or large plates; m.p. 65–66°C when anhydrous; with 1.5 molecules water, m.p. is 43–44°C; soluble in water and alcohol; slightly soluble in benzene; insoluble in ether and carbon disulfide.
Derivation: By reacting benzene with fuming sulfuric acid.
Uses: Manufacture of phenol, resorcinol and other organic syntheses, and as a catalyst.

benzene-1,3-5-tricarboxylic acid chloride. See trimesoyl trichloride.

benzenoid. Any organic compound containing or derived from the benzene ring structure, e.g., phenol,

"Coagulant Aid."[108] Trademark for a series of polyelectrolytes and combinations of polyelectrolytes with other materials.

Uses: Clarification of water for municipal and industrial uses.

coagulation. Irreversible combination or aggregation of semisolid particles such as fats or proteins to form a clot or mass. This can often be brought about by addition of appropriate electrolytes, for example, by the addition of an acid to milk or of aluminum sulfate to turbid water. Mechanical agitation and removal of stabilizing ions, as in dialysis, also cause coagulation. The clotting of blood by thrombin (q.v.), the coagulation of rubber particles in latex by acetic acid and of egg-white by heat are additional instances. See also flocculation.

Coahran process. Recovery of acetic acid from pyroligneous acid by extracting with ether It is an improved version of the Brewster process (q.v.), but is basically the same

coal. A natural solid combustible material consisting chiefly of amorphous elemental carbon with low percentages of hydrocarbons, complex organic compounds and inorganic materials. Coal was formed from prehistoric plant life and occurs in layers or veins in sedimentary rocks. It is far more plentiful in the U.S. than petroleum and is an important source of heat and energy: its use as a fuel is increasing. In the U.S. it occurs chiefly in West Virginia and Kentucky, as well as in Wyoming and other western states. Much of it is too high in sulfur content to meet present pollution standards.

Coal is classified according to its heating value, expressed in Btu/lb, and its fixed carbon content.

	Fixed Carbon	Btu/lb
Anthracite	86–98%	13,500–15,600
Low to Medium Volatile Bituminous	69–86%	14,500–15,600
High Volatile Bituminous	46–69%	11,000–15,000
Subbituminous	46–60%	8,300–13,000
Lignite	46–60%	5,500– 8,300

Coal is most frequently specified in terms of its proximate analysis, giving the percentages of moisture, volatile combustible matter, fixed carbon, and ash. An ultimate analysis gives the percentages of the various elements present (C, H, O, N, and S).

Coal is also an important source of chemical raw materials: pyrolysis (destructive distillation) yields coal tar and hydrocarbon gases, which can be upgraded by hydrogenation or methanation to synthetic crude oil and fuel gas, respectively; catalytic hydrogenation yields hydrocarbon oils and gasoline; gasification produces carbon monoxide and hydrogen (synthesis gas) from which ammonia and other products can be made. Numerous processes for adapting these reactions to large-scale production of fuel oil and gasoline are in the pilot-plant stage, though none has yet been commercially developed. Methane is being produced from coal mines on a commercial scale.

See also gasification; hydrogenolysis; hydrosolvation.

Note: Pending the further development of alternative energy sources, coal is probably the safest and most abundant fuel available in the U.S. A large percentage can be obtained by surface or strip mining, though the necessary restoration of the environment (soil and plant life) is expensive. Improvements in safety are needed in order to realize full and safe production from deep mines.

coal gas (bench gas; coke-oven gas) A mixture of gases produced by the destructive distillation of bituminous coal in highly heated fire-clay or silica retorts or in by-product coke ovens.

Hazard: Flammable; highly toxic.

Uses: Directly in open hearth furnaces.

Shipping regulations: (Rail) Red Gas label. (Air) Flammable Gas label. Not accepted on passenger planes.

coalescence. The union of two or more droplets of a liquid to form a larger droplet, brought about when the droplets approach one another closely enough to overcome their individual surface tensions. The combination of fine mercury droplets is an example Coalescing agents are used to remove solid contaminants from hydrocarbons; coalescence may also be brought about by mechanical means in centrifuges

coal, gasification. See gasification.

coal, hydrogenation. See hydrogenolysis: gasification

coal oil. The crude oil obtained by the destructive distillation of bituminous coal; or the distillate obtained from this oil.

Hazard: Flammable, moderate fire risk.

coal tar.

Properties: Black, viscous liquid (or semi-solid), naphthalene-like odor; sharp burning taste; obtained by destructive distillation of bituminous coal, as in cokeovens; one ton of coal yields 8.8 gallons of coal tar. Combustible. Sp. gr. 1.18 to 1.23 (60 60°F). Soluble in ether, benzene, carbon disulfide, chloroform; partially soluble in alcohol, acetone, methanol, and benzene; only slightly soluble in water.

Coal tar may be hydrogenated under pressure to form a petroleum-like fuel suitable for residual use.

Coal-tar fractions obtained by distillation and the chemicals found in each are as follows: (1) light oil (up to 200°C); benzene, toluene, xylenes, cumenes, coumarone, indene; (2) middle oil (200–250°C) and (3) heavy oil (250–300°C): naphthalene, acenaphthene, methylnaphthalenes, fluorene, phenol, cresols, pyridine, picolines; (4) anthracene oil (300–350°C): phenanthrene, anthracene, carbazole, quinolines; and (5) pitch (q.v.). Typical yields: 5% light oil; 17% middle oil; 7% heavy oil; 9% anthracene oil; 62% pitch. Treatment with alkalies, acids, and solvents is necessary to separate the individual chemicals.

Grades: Crude, refined; U.S.P.

Containers: Tank cars; barrels.

Hazard: Toxic by inhalation.

Uses: Raw material for plastics, solvents, dyes, drugs, and other organic chemicals. The crude or refined product or fractions therof are also used for waterproofing, paints, pipecoating, roads, roofing, insulation, as pesticides and sealants, and in medicine.

coal-tar distillate. The lighter fractions of coal tar. The terms coal tar light oil, coal tar naphtha, and coal tar oil are loosely defined and are sometimes regarded as synonymous.

Hazard: Flammable, dangerous fire risk. Toxic by inhalation and skin absorption.

Shipping regulations: (Rail) Red label. (Air) Flammable Liquid label.

See also entries under naphtha.

coal-tar dye. A dye produced from the coal-tar hydrocarbons or their derivatives such as benzene, toluene, xylene, naphthalene, anthracene, aniline, etc. See also dye, synthetic.

Shipping regulations: (Air) Coal-tar dye, liquid, n.o.s., Corrosive label.

Properties: Colorless to yellow liquid. Sp gr. 1.092 (25°C); m.p. 5.5°C; b.p. 220°C; slightly soluble in water; soluble in alcohol, benzene, chloroform, ether, acetic acid.

creosote carbonate.
Properties: Clear, colorless or yellowish, viscous liquid; slight creosote odor and taste. Soluble in alcohol; insoluble in water.
Derivation: Mixture of carbonates of various constituents of creosote.
Use: Medicine.

creosote, coal-tar (creosote oil; liquid pitch oil; tar oil).
Properties: Yellowish to dark green-brown, oily liquid; clear at 38°C or higher; naphthenic odor; frequently contains substantial amounts of naphthalene and anthracene; distilling range 200–400°C; flash point 165°F (closed cup); soluble in alcohol, benzene, and toluene; immiscible with water Combustible.
Derivation: Fractional distillation of coal-tar.
Method of purification: Rectification.
Grades: Technical; crude; refined.
Containers: Drums; tank cars.
Hazard: Toxic by inhalation of fumes; skin and eye irritant. Use may be restricted.
Uses: Wood preservative (ties, telephone poles, marine piling, etc.); disinfectants.

para-cresidine. See 5-methyl-ortho-anisidine.

"Creslan."[57] Trademark for an acrylic fiber.

cresol (methyl phenol; hydroxymethylbenzene) $CH_3C_6H_4OH$. A mixture of isomers obtained from coal tar or petroleum.
Properties: Colorless, yellowish, or pinkish liquid; phenolic odor; sp. gr. 1.030–1.047; wt/gal 8 66–8.68 lb; flash point approx. 180°F; m.p. 11–35°C; b.p. 191–203°C. Soluble in alcohol, glycol, and dilute alkalies. Combustible.
Derivation: Coal tar (from coke and gas works), also synthetic.
Grades: Various, depending on phenol content, or other properties. N.F. grade contains not more than 5% phenol.
Containers: Drums; tank cars; tank trucks.
Hazard: Toxic and irritant; corrosive to skin and mucous membranes; absorbed through skin. Tolerance, 5 ppm in air. Safety data sheet available from Manufacturing Chemists Assn., Washington, D.C.
Uses: Disinfectant; phenolic resins; tricresyl phosphate; ore flotation; textile scouring agent; organic intermediate; mfg. of salicylaldehyde, coumarin, and herbicides; surfactant; synthetic food flavors (para isomer only).
Shipping regulations: (Air) Poison label.
See also cresylic acids.

meta-cresol (meta-cresylic acid; 3-methylphenol) $CH_3C_6H_4OH$.
Properties: Colorless to yellowish liquid; phenol-like odor. Soluble in alcohol, ether, and chloroform; soluble in water. Sp. gr. 1.034; m.p. 12°C; b.p. 203°C; wt/gal 8.66 lb flash point 187°F. Combustible. Autoignition temp. 1038°F.
Derivation: By fractional distillation of crude cresol (from coal tar); also synthetically.
Method of purification: Rectification.
Grade: Technical (95–98%).
Toxicity, uses, see cresol.

ortho-cresol (ortho-cresylic acid; 2-methylphenol) $CH_3C_6H_4OH$.
Properties: White crystals; phenol-like odor. Soluble in alcohol, ether, chloroform, and hot water. Sp. gr. 1.047; m.p. 30.9°C; flash point 178°F. Autoignition temp. 1110°F; b.p. 191°C; lb/gal 8.68. Combustible.
Derivation: (a) By fractional distillation of crude cresol from coal tar. (b) Interaction of methanol and phenol.
Method of purification: Crystallization.
Grades: According to freezing point: 25°, 29°, 30°, 30.5°C, etc.
Toxicity, uses, see cresol.

para-cresol (para-cresylic acid; 4-methylphenol) $CH_3C_6H_4OH$.
Properties: Crystalline mass; phenol-like odor. Soluble in alcohol, ether, chloroform, and hot water; wt/gal 8.67 lb. Sp. gr. 1.039; b.p. 202°C; m.p. 35.26°C; flash point 187°F. Combustible. Autoignition temp. 1038°F.
Derivation: (a) By fractional distillation of crude cresol. (b) From benzene by the cumene process (see phenol).
Method of purification: Crystallization
Grades: Technical; 98%; 99.0% min purity or 34°C min F.P.
Toxicity, uses, see cresol.

cresolphthalein $C_6H_4COOC(C_6H_3(OH)CH_3)_2$. An acid-base indicator, changes from colorless to red between pH 8.2 and 9.8. See also indicator.

cresol purple $C_6H_4SO_2OC(C_6H_3(OH)CH_3)_2$. Meta-cresolsulfonphthalein, an acid-base indicator, showing color change from red to yellow over the range pH 1.2 to 2.8 and from yellow to purple over the range pH 7.4 to 9.0. See also indicator.

cresol red $C_6H_4SO_2OC(C_6H_3(OH)CH_3)_2$. Ortho-cresolsulfonphthalein, an acid-base indicator, changes from red to yellow between pH 0.2 and 1.8 and from yellow to red between pH 7.0 and 8.8. See also indicator.

cresotic acid (cresotinic acid; hydroxytoluic acid) $CH_3C_6H_3(OH)COOH$. Ten possible isomers; most common is 2-hydroxy-3-methylbenzoic acid, also known as ortho-cresotic acid or ortho-homosalicylic acid. The description which follows is of this isomer.
Properties: White crystals or powder; m.p 166°C; b.p. about 250°C; insoluble in water; soluble in alcohol and ether. Combustible.
Derivation: Treatment of ortho-cresol with caustic and carbon dioxide under pressure.
Containers: Fiber cans; drums.
Uses: Dye intermediate; research on plant growth inhibition.

"Crestalkyd."[263] Trademark for a group of oil-modified alkyd resins. Oil length from 30% to 80%, A.V. < 15.
Uses: High-quality paints, lacquers, enamels, and varnishes. Plasticizing resin for nitrocellulose and similar finishes.

"Crestapol."[263] Trademark for a series of plasticizers for polyvinyl chloride; also a designation for specialty polyesters used in dispersing media.

(c) *cleaners*'. A dry-cleaning fluid derived from petroleum and similar to Stoddard solvent (q.v.), but not necessarily meeting all its specifications. Flash point 100°F.

(2) *coal-tar*

(a) *heavy* (high-flash naphtha)

Properties: Deep amber to dark red liquid; a mixture of xylene and higher homologs; sp. gr. 0.885–0.970; b.p. 160–220°C (about 90% at 200°C); flash point 100° F; evaporation 303 minutes.

Derivation: From coal-tar by fractional distillation.

Containers: Drums; tank cars.

Hazard: Toxic by ingestion, inhalation, and skin absorption. Moderate fire risk. Tolerance, 100 ppm in air.

Uses: Coumarone resins; solvent for asphalts, road tars, pitches, etc.; cleansing compositions; process engraving and lithography; rubber cements (solvent); naphtha soaps; mfg. of ethylene and acetic acid.

(b) *solvent* (160° benzol).

Properties: A mixture of small percentages of benzene and toluene with xylene and higher homologs from coal-tar. (a) Crude: dark straw-colored liquid. (b) Refined: water-white liquid. Sp. gr. (a) 0.862–0.892, (b) 0.862–0.872; b.p. (a) about 160°C (80%), (b) about 160°C (90%); flash point (a) and (b) about 78°F.

Derivation: From coal-tar by fractional distillation.

Grades: Dark straw; water-white.

Containers: Drums; tank cars.

Hazard: Flammable, dangerous fire risk.

Uses: Solvent; xylene; cumene; nitrated, for incorporation in dynamite.

Shipping regulations: (Rail) Red label. (Air) Flammable Liquid label.

naphthacene (tetracene; rubene) $C_{18}H_{12}$. The molecule consists of four fused benzene rings.

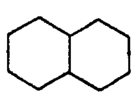
Properties: Orange solid; sp. gr. 1.35; m.p. about 350°C; not easily soluble; slight green fluorescence in daylight.

Occurrence: In commercial anthracene and coal tar.

Hazard: Explodes when shocked; reacts with oxidizing materials.

Uses: Organic synthesis.

naphthalene (tar camphor) $C_{10}H_8$.



Properties: White crystalline, volatile flakes; strong coal-tar odor. Soluble in benzene, absolute alcohol and ether; insoluble in water. Sp. gr. 1.145 (20/4°C); m.p. 80.2°C; b.p. 217.96°C; flash point 176°F. Sublimes at room temperature. Autoignition temp. 979°F. Combustible.

Derivation: (a) From coal-tar oils boiling between 200 to 250°C (middle oil) by crystallization and distillation. (b) From petroleum fractions after various catalytic processing operations.

Grades: By melting point, 74°C min (crude) to above 79°C (refined); scintillation (80–81°C).

Forms: Flakes, cubes, spheres, powder.

Containers: Cans; drums; tank cars.

Hazard: Toxic by inhalation. Safety data sheet available from Manufacturing Chemists Assn., Washington, D.C. Tolerance, 10 ppm in air.

Uses: Intermediate (phthalic anhydride, naphthol, "Tetralin," "Decalin," chlorinated naphthalenes, naphthyl and naphthol derivatives, dyes); moth repellent; fungicide; explosives; cutting fluid; lubricant; synthetic resins; synthetic tanning; preservative; solvent; textile chemicals; emulsion breakers; scintillation counters.

Shipping regulations: (Air) Crude or refined: Flammable Solid label.

alpha-naphthaleneacetic acid (1-naphthylacetic acid) $C_{10}H_7CH_2COOH$.

Properties: White crystals, odorless; m.p. 132–135°C. Soluble in acetone, ether, and chloroform; slightly soluble in water and alcohol.

Grades: Usually supplied in dilute form, either as a powder or liquid solution ready for use.

Containers: Powder; fiber cans or multiwall paper sacks; solution: glass bottles and carboys.

Hazard: Moderately toxic; skin irritant.

Uses: Inducing rooting of plant cuttings; spraying apple trees to prevent early drop.

alpha-naphthaleneacetic acid, methyl ester (MENA) $C_{10}H_7CH_2COOCH_3$. A plant growth regulator or hormone, used for delaying sprouting of potatoes, weed control, thinning of peaches, etc.

naphthalene, chlorinated. See chlorinated naphthalene.

naphthalenediamine. See naphthylenediamine.

1,5-naphthalene diisocyanate $C_{10}H_6(NCO)_2$. White to light yellow crystalline solid; m.p. 127–131°C.

Hazard: Toxic and irritant.

Use: Manufacture of polyurethane solid elastomers.

naphthalene-1,5-disulfonic acid (Armstrong's acid) $C_{10}H_6(SO_3H)_2$.

Properties: White crystalline solid; soluble in water.

Derivation: Sulfonation of naphthalene with fuming sulfuric acid at low temperature and separation from the 1,6 isomer. Combustible.

Hazard: May be toxic.

Uses: Intermediate for dyes.

naphthalene-2,7-disulfonic acid $C_{10}H_6(SO_3H)_2$.

Properties: White crystalline solid; soluble in water. Combustible.

Derivation: Sulfonation of naphthalene at high temperature and separation from 2,6-isomer.

Hazard: May be toxic.

Use: Intermediate for dyes.

alpha-naphthalenesulfonic acid $C_{10}H_7SO_3H \cdot H_2O$.

Properties: Deliquescent crystals; soluble in water, alcohol, and ether. M.p. 90°C. Combustible.

Derivation: Interaction of naphthalene and sulfuric acid.

Hazard: May be toxic.

Uses: Starting point in the manufacture of alpha-naphthol, alpha-naphtholsulfonic acid, alpha-naphthylaminesulfonic acid; solvent (sodium salt) for phenol in the manufacture of disinfectant soaps.

beta-naphthalenesulfonic acid $C_{10}H_7SO_3H$ or $C_{10}H_7SO_3H \cdot H_2O$.

Properties: Non-deliquescent, white plates; m.p. 124–125°C. Soluble in water, alcohol, and ether. Combustible.

Derivation: Sulfonation of naphthalene.

Hazard: May be toxic.

Uses: Starting point in the manufacture of beta-naphthol, beta-naphtholsulfonic acid, beta-naphthylaminesulfonic acid; etc.

26

UNDERGROUND GASIFICATION OF COAL

The United States, Britain, and the Soviet Union have made tests to gasify coal underground to obtain a low-Btu gas. In this approach, input- and output-bore holes are drilled down to a coal bed at selected points, an oxidizing agent is pumped down the input holes, the coal is ignited, and the gaseous combustion products, including H_2, CO, and CO_2, are obtained from the output-bore holes. Where air is used as the oxidizing agent, methane forms only about 5% of the output-gas volume. This percentage can be increased, for example, by using oxygen rather than air as the oxidant. So far, only the Soviet Union is believed to have practiced underground gasification of coal on a commercial basis. However, this technique may prove to be the most practical way to obtain energy from coal in very deep seams and other seams where mining is impracticable.

Further Reading: Office of Coal Research, *Evaluation of Coal Gasification Technology, Part 1—Pipeline Quality Gas* (U. S. Department of the Interior 1973); Osborn, Elburt F., "Coal and the Present Energy Situation," *Science*, vol. 183, no. 4124, Feb. 8, 1974

COAL LIQUEFACTION is the conversion of coal to a liquid hydrocarbon such as synthetic crude oil (syncrude) or low-sulfur fuel oil. The pioneering work in this field was done by the German chemist Friedrich Bergius, who patented a process for converting coal to oil in 1913, and the German chemists Franz Fischer and Hans Tropsch, who developed another conversion process in 1923. See also BERGIUS, FRIEDRICH; FISCHER-TROPSCH PROCESS.

Plants that produced coal-derived liquid fuels were established in Germany, Japan, England, and other countries having poor petroleum resources, but these fuels generally played a temporary minor role because they cost considerably more than petroleum products. In the 1970's, however, petroleum costs and energy shortages led to renewed interest in coal liquefaction.

Processes. In the Fischer-Tropsch process a coal-derived gas consisting of carbon monoxide and hydrogen is passed through a catalytic reactor, yielding liquid hydrocarbon products. This process is in limited use for commercial production of liquid hydrocarbons.

Pilot-plant studies of other processes can be divided into two classes—coal hydrogenation processes, in which coal is reacted with hydrogen; and coal pyrolysis processes, in which coal is decomposed into liquids by heat.

In the Synthoil process developed by the U. S. Bureau of Mines, crushed coal is slurried with a coal-derived oil. The slurry and turbulently flowing hydrogen are fed to a fixed-bed catalytic reactor, in which the coal is liquefied and desulfurized. The yield is about three barrels of low-sulfur fuel oil per ton of coal. Other coal hydrogenation processes include the H-coal process developed by Hydrocarbon Research, Inc.

In the Coed process developed by the FMC Corporation, crushed coal is heated to successively higher temperatures in a series of fluidized-bed reactors. After further processing, the main products are syncrude, fuel gas, and residual char. The syncrude yield is about one barrel per ton of coal. Another coal pyrolysis process is the Oil Shale Corporation's Toscoal process.

Further Reading: Institute of Gas Technology, *Clean Fuels from Coal* (Institute of Gas Technology 1973).

COAL TAR is a heavy, dark viscous liquid obtained from the destructive distillation, or carbonization, of coal. The primary product of the carbonization of coal is coke, while the secondary products are coal tar, light oil, ammonia liquor, and coal gas.

Production. Modern coke ovens are equipped for the efficient recovery of coal tar and the other by-products of the coking process. The ovens, which are erected together in batteries, are long, narrow brick chambers. The coal is coked by the combustion of a fuel gas in flues in the walls. In the commonly used high-temperature carbonization process, the oven walls are at a temperature of from 870° to 1205° C (1600° to 2200° F). As the coal carbonizes, the tar and other compounds are separated from the generated gas by cooling in a collecting main; the liquid stream passes to a decanter where the tar and ammoniacal liquor form two layers and are separated. The coal tar is then distilled to give light and middle oils, methylnaphthalenes, and three creosote portions. The residue remaining from the distillation is refined coal tar or coal tar pitch. The term *pitch* is used to designate the semisolid or solid residues of distillation, while *tar* is used to refer to the liquid residues. See also COKE.

Composition and Properties. Coal tar is a complex mixture of organic compounds, most of which are aromatic hydrocarbons. Light oil, which is the fraction that distills off at temperatures of up to 200° C (392° F), contains benzene, toluene, xylene, and various tar acids and bases. The middle oil, which distills off at from 200° to 250° C (392° to 482° F), is primarily composed of tar acids and bases and naphthalene. Heavy oils are recovered at temperatures of from 250° to 300° C (482° to 572° F). This fraction includes the methylnaphthalenes and the creosotes, which contain various aromatic compounds such as phenanthrene, chrysene, and pyrene. At temperatures of from 300° to 350° C (572° to 662° F), phenanthrene, anthracene, carbazole, and quinoline distill off, and the residue of this distillation is the coal tar pitch.

Coal tar pitch has been shown to contain approximately 93% carbon, 4.5% hydrogen, and small amounts of nitrogen, oxygen, and sulfur. More than 100 different compounds have been identified in the coal tar pitch. The molecules found in pitch are relatively small, with molecular weights of from 200 to 2,000. Pitch residues usually exhibit a great change in viscosity with changes in temperature. Both coal tars and coal tar pitches have been found to be extremely resistant to water absorption and to moisture vapor permeation.

Modification of Pitch. Depending on the degree of reduction by distillation and other treatments, the flow properties and the hardness of the pitch can be varied greatly. Thus, properties can be changed by the addition of oils or solvents or by additional polymerization. Modification of the pitch can also be effected by the addition of coal fines. Upon heating, the fines are "digested" and this process lowers the susceptibility of the pitch to alterations in viscosity due to changes in temperature.

Uses. Coal tar is used in the production of chemically cured thermosetting mixtures. It has been used with epoxies, urethanes, and polysulfides in the preparation of various chemically resistant and antiskid coatings and sealants. Coal tars are used in road construction and mainte-

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nance, although their use for these purposes has decreased since World War II because of the increased use of petroleum asphalts. Coal tars are also used on airport surfaces because they are very resistant to jet fuels and other petroleum oils. In addition to wearing well, surfaces containing coal tars maintain their skid-resistant qualities over long periods of time.

The importance of coal tar pitches has increased tremendously in recent years because of the growing number of useful chemicals recovered and derived from them. However, the single most important use of coal tar pitch itself in the United States is as a fuel. It is widely used in steel manufacturing as the fuel for open-hearth furnaces. Another important use of pitch is in the manufacture of carbon electrodes, which are widely used in dry cell batteries and in certain metallurgical processes.

Pitch is also used as a foundry core binder and as a binder for the briquetting of coal and coke. Further uses are: in the construction of certain types of roofs; for waterproofing; as a saturant for fiber pipes used to drain water or sewage; as a coating for other types of pipe; as a base in the preparation of various protective coatings; for protection of metals and structures against a marine environment; and to prevent corrosion in underground water, oil, and gas lines.

Creosote, which is one of the heavy tar oils, is of great and long-standing importance as a preservative for wood. It is used to protect objects such as telephone poles, railroad ties, and dock pilings.

While a great number of chemicals may be recovered from the distillation of coal tar, relatively few of these compounds are obtained in large enough quantities to be of real industrial importance. Naphthalene, quinoline, and tar acids, including phenol, cresols, and xylenols, are the most important of the chemicals. Anthracene is also recovered from the coal tar, but in smaller quantities than the other chemicals.

Naphthalene is an intermediate used in the production of dyes, synthetic resins, and other chemicals. It is also used in fungicides, moth repellents, lubricants, and explosives and as a preservative and solvent. Quinoline is used for the production of dyes and niacin and as a preservative and solvent. The coal tar acids are used as insecticides and wood preservatives and in disinfectants. Anthracene is used in the manufacture of dyes.

History. The first reference to tar obtained from coal appeared in a British patent in 1681. However, it was not until 1781 that any commercial uses of coal tar were realized, and even then most recovered coal tar was dumped into the sea. In 1881 the Germans successfully introduced the by-product coking oven for the production of metallurgical grade coke. With the advent of these ovens, it became possible to recover coal tars and pitch in large quantities.

It was gradually realized that important solvents and wood preservatives could be obtained from coal tars and that the residue could be used for highway pavement binders and for specialized coatings. Extensive use of the refined coal tars, and especially of coal tar pitches, developed concurrently with the derivation of chemicals and dyes from the distilled fractions of coal tar.

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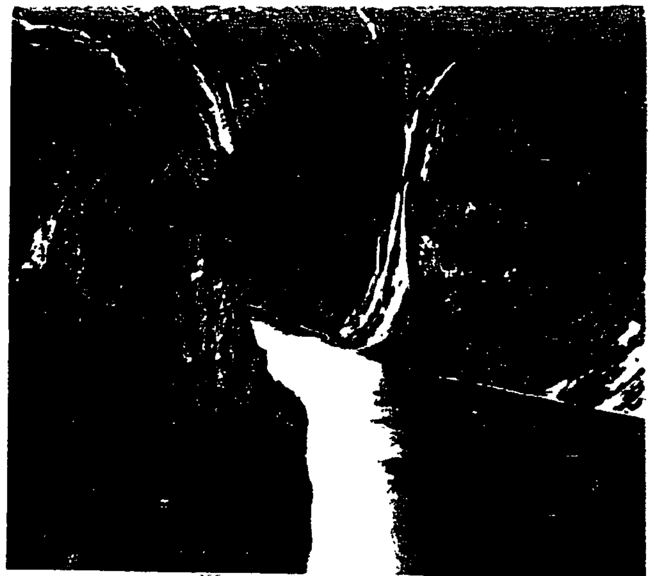


NORWEGIAN INFORMATION SERVICE

Fjords—deep arms of the sea extending far inland—are characteristic of the glaciated coast of Norway.

26

FAIRCHILD AERIAL SURVEYS

The barrier coast at Lloyd Neck, Long Island, N. Y., is a sand spit separated from the mainland by a lagoon.

COAST, the land bordering an ocean or a sea. Coasts vary considerably according to local geology and geomorphology and the stability of the sea level. Under stable conditions the sea tends to erode the softer rocks and form bays, while the harder rocks remain to form headlands.

FORMATION OF COASTS

Coasts are subject to constant change because of the action of waves, currents, rivers, ice, and winds. They are also subject to occasional change as a result of movements in the earth's crust.

In calm weather, the sea has little erosional effect on the coast, instead making shoreline deposits of sand and gravel. In stormy weather, great waves hurl sand, gravel, and rocks against the land, causing erosion of the coast.

The material torn loose from the land by the sea is graded according to size. Gravel and sand remain close to shore, forming beaches, spits, and bars, while the fine material is swept out to sea. The speed with which the sea erodes the coast depends on the frequency of powerful onshore winds, the resulting waves, and the resistance of the coastal rocks.

Roberts + Caserio, Basic Principles of Organic Chemistry.
NY; W.A. Benjamin, Inc., 1965

small. Whether an alkane is branched or not can be readily ascertained by inspection of the ratio of the integral of the CH_3 resonances centered on 0.9 ppm versus the integral of the CH_2 resonances centered on 1.25 ppm (see Figure 3-4).

Mass spectrometry is excellent for the analysis of alkane mixtures and is widely used for this purpose.

CHEMICAL REACTIONS OF ALKANES

3-4 COMBUSTION OF ALKANES

As a class, alkanes are singularly unreactive. Hence the name saturated hydrocarbon or "paraffin," which literally means "not enough affinity" [L. *par(um)*, not enough, + *affins*, affinity], arises because their chemical "affinity" for most common reagents may be regarded as "saturated" or satisfied. Thus none of the C—H or C—C bonds in a typical saturated hydrocarbon, such as ethane, are attacked at ordinary temperatures by a strong acid such as sulfuric acid or by an oxidizing agent such as bromine (in the dark), oxygen, or potassium permanganate. Ethane is similarly stable under ordinary conditions to reducing agents such as hydrogen in the presence of such catalysts as platinum, palladium, or nickel.

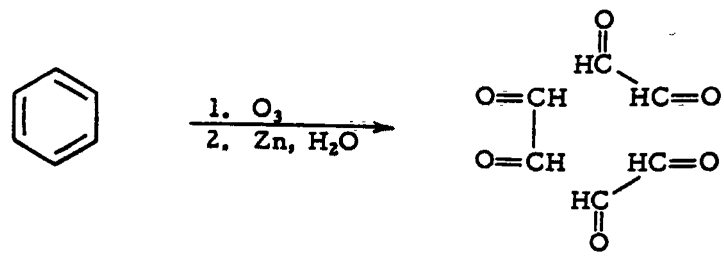
However, all saturated hydrocarbons are attacked by oxygen at elevated temperatures and, if oxygen is in excess, complete combustion occurs to carbon dioxide and water. Vast quantities of hydrocarbons from petroleum are utilized as fuels for the production of heat and power by combustion. Although petroleums differ in composition with their source, a representative petroleum[1] on distillation yields the following fractions: (a) *Gas* fraction, boiling point up to 40° C, contains normal and branched alkanes from C_1 to C_5. Natural gas is mainly methane and ethane while "bottled" gas (liquefied petroleum gas) is mainly propane and butane. (b) *Gasoline*, boiling point from 40 to 180° C, contains hydrocarbons from C_6 to C_{10}. Over 100 compounds have been identified in gasoline, and these include normal and branched alkanes, cycloalkanes, and alkylbenzenes (arenes). The branched alkanes make better gasoline than their straight-chain isomers because they have much higher antiknock ratings. (c) *Kerosine*, boiling point 180 to 230° C, contains hydrocarbons from C_{11} to C_{12}. Much of this is utilized as jet engine fuels and much is "cracked" to simpler alkanes (and alkenes). (d) *Light gas oil*, boiling point 230 to 305° C, C_{13} to C_{17}, is utilized as diesel and furnace fuels. (e) *Heavy gas oil and light lubricating distillate*, boiling point 305 to 405° C, C_{18} to C_{25}. (f) *Lubricants*, boiling point 405 to 515° C, C_{26} to C_{38}, familiarly encountered as paraffin wax and petroleum jelly (Vaseline). The distillation residues are better known as asphalts.

3-5 ESTIMATION OF HEATS OF COMBUSTION. BOND ENERGIES

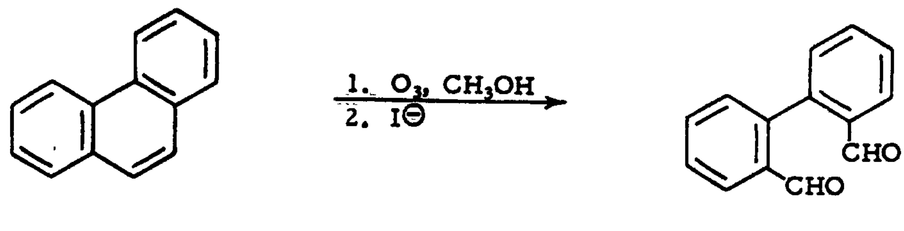
The combustion of alkanes obtained from petroleum is a major source of heat and power. Consequently, it is of practical interest to be able to estimate the amount of heat liberated in the combustion of different kinds of hydrocarbons. This can be done quite simply with the aid of tables of bond energies—and the method is

[1] See "Hydrocarbons in Petroleum" by F. D. Rossini, *J. Chem. Ed.*, 37, 554 (1960).

26



The double-bond character of the 9,10-bond in phenanthrene is particularly evident in ozonization. This bond is attacked preferentially and leads to the formation of 2,2′-diphenaldehyde when the ozonide is reduced with iodide ion.



2,2′-diphenaldehyde

EXERCISE 22-42 What products would you expect to be formed in the ozonization of the following substances (consider carefully which bonds are likely to be most reactive)?

a. o-xylene

b. naphthalene

22-10 SOURCES AND USES OF AROMATIC HYDROCARBONS

Benzene and many of its derivatives are manufactured on a very large scale for use in high-octane gasolines, and in the production of polymers, insecticides, detergents, dyes, and other miscellaneous chemicals. Prior to World War II, coal was the only important source of aromatic hydrocarbons, but, during the war and thereafter, the demand for benzene, toluene, and the xylenes rose so sharply that other sources had to be found. Today, about 70 per cent of the benzene and almost all of the toluene and the xylenes produced in the United States are derived from petroleum.

A. Aromatics from Coal

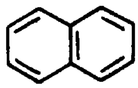
When coal is heated at high temperatures in the absence of air, it carbonizes to coke and gives off a gaseous mixture of compounds, some of which condense to a black viscous oil (coal tar), others to an aqueous condensate called **ammoniacal liquors**, and some remain gaseous (**coal gas**). Crude coal gas contains small but valuable amounts of benzene, toluene, and the xylenes mixed with many other compounds including cyclopentadiene, thiophene, and naphthalene. The arenes are recovered as **light oil** by a process known as "scrubbing" and are then separated by fractional distillation.

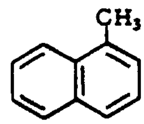
Very little is wasted in the coking of coal. Coal tar is the source of an amazing number of compounds, some of which are listed in Table 22-9; they are mainly aromatic and in-

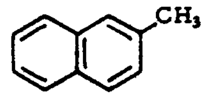
26

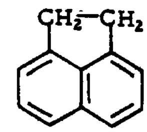
Table 22-9 Principal Compounds Obtained from Coal Tar[a,b]

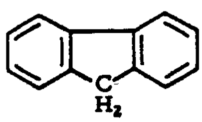
Hydrocarbons[c]

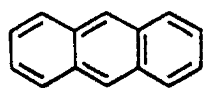

naphthalene

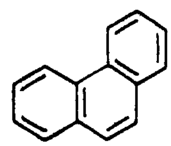

1-methyl-naphthalene

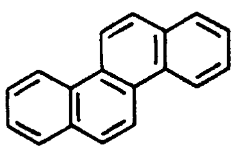

2-methyl-naphthalene

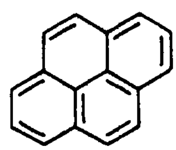

acenaphthene

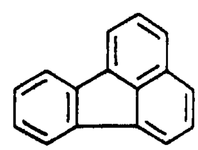

fluorene


anthracene

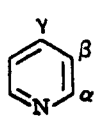

phenanthrene

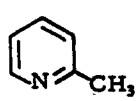

chrysene

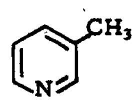

pyrene

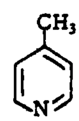

fluoranthene

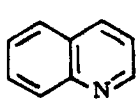
Nitrogen compounds

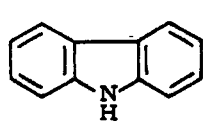

pyridine

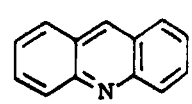

α-picoline

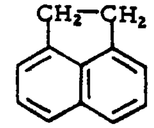

β-picoline


γ-picoline

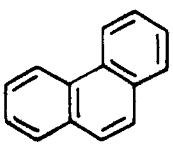

quinoline


carbazole

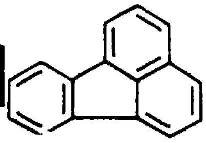

acridine



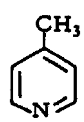
acenaphthene



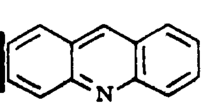
phenanthrene



fluoranthene

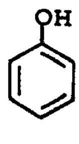
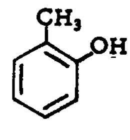
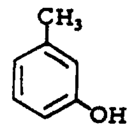
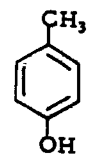
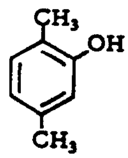
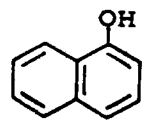
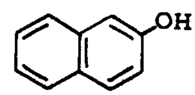


γ-picoline



acridine

Table 22-9 Principal Compounds Obtained from Coal Tar[a,b] (Continued)

Oxygen compounds			
 phenol	 *o*-cresol	 *m*-cresol	 *p*-cresol
 *p*-xylenol (and other xylenols)	 1-naphthol	 2-naphthol	

[a] Compiled from "Chemistry of Coal Utilization," National Research Council Committee, H. H. Lowry (ed.), Wiley, 1945.

[b] None of the compounds listed are very abundant in coal tar. Even naphthalene, which is present in the largest amount, constitutes only 10 to 11 per cent of coal tar.

[c] Benzene, toluene, and the xylenes are present in very small amount (0.3 per cent total) in coal tar.

clude oxygen and nitrogen compounds as well as hydrocarbons. Coal gas (freed of light oil) is used as a fuel and the ammoniacal liquors are a source of ammonia. The residual coke is used both as a fuel and as a source of carbon for the production of steel from iron oxides. In fact, one of the reasons that new sources of arenes had to be found was the undesirable dependence of the supply of arenes on the demand for coke by the steel industry.

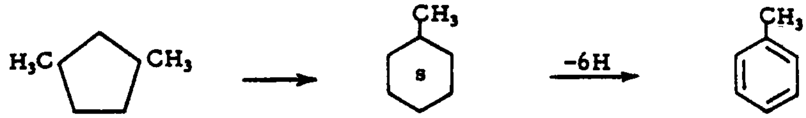
It is also possible to make a variety of aromatic hydrocarbons by hydrogenation of powdered coal at high temperature and pressure. Such processes do not appear to be economically feasible at the present time.

B. Aromatics from Petroleum

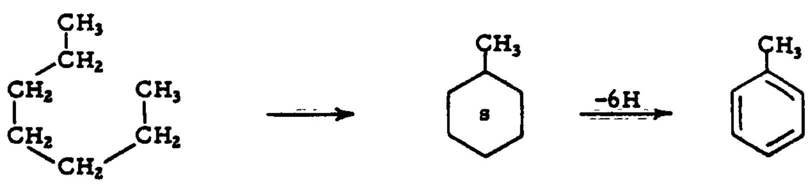
Although petroleums from some locations do possess fairly substantial amounts of aromatic hydrocarbons, they are not a principal source of supply for such compounds. Rather, aromatics are synthesized from the aliphatic components of the C_6—C_{10} gasoline fraction from petroleum refining by a process that is referred to in the petrochemical industry as **catalytic reforming**. This involves passing the hydrocarbon vapors mixed with excess hydrogen over a catalyst, usually platinum on alumina, at elevated temperatures (900°C) and pressures (200 to 500 psi). Several remarkable transformations take place. For example: Cyclohexane and methylcyclohexane are dehydrogenated to benzene and toluene, respectively;

26

dimethylcyclopentanes are isomerized to methylcyclohexane, which is then dehydrogenated to toluene;



and open-chain alkanes are cyclized to cycloalkanes, which then lose hydrogen to give arenes.

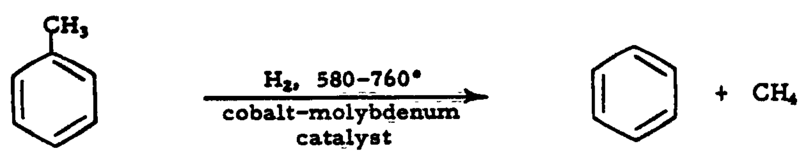


n-heptane

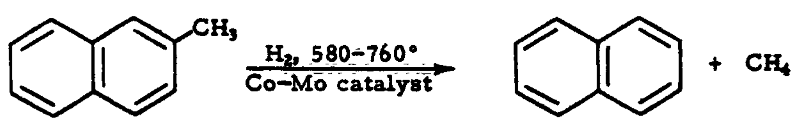
In spite of the fact that hydrogen is a product of reforming, excess hydrogen is necessary to reduce formation of carbon deposits on the catalyst. As a further precaution against poisoning the catalyst, the reactants are freed from nitrogen and sulfur contaminants by first heating them in the presence of hydrogen and a cobalt-molybdenum catalyst, then fractionating the hydrocarbons from the ammonia and hydrogen sulfide thereby formed.

Much of the aromatic product obtained by catalytic reforming is blended with other fractions from petroleum refining to give high-octane gasoline. The rest is separated into its component hydrocarbons, which are then utilized by the chemical industry for the production of chemicals derived from benzene, toluene, and the xylenes (see Table 22-10).

The ratio of benzene, toluene, and xylenes obtained from petroleum is roughly 1:4:5, which contrasts with the ratio of 16:3:1 obtained from coal. Since there is currently more demand for benzene than for toluene, much of the toluene obtained from petroleum is converted to benzene by a process called **hydrodealkylation**. This involves heating a mixture of toluene with excess hydrogen to fairly high temperatures in the presence of a cobalt-molybdenum catalyst.



Naphthalene is obtained primarily from coal tar, but increasing amounts are being produced from petroleum. The residues from catalytic reforming of gasoline are rich in methylnaphthalenes, and these can be hydrodealkylated to naphthalene in the same way that toluene is converted to benzene.



REF. 27

U. S. DEPARTMENT OF COMMERCE
WEATHER BUREAU

CLIMATOGRAPHY OF THE UNITED STATES NO. 60 – 30

CLIMATES OF THE STATES

NEW YORK

WASHINGTON, D. C.

FEBRUARY 1960

Climate of New York

Ernest C. Johnson, Weather Bureau State Climatologist

The climate of New York State is broadly representative of the moist continental type area which blankets the northeastern United States, but its diversity is not usually encountered within such a small area. Differences in latitude, character of topography, and bodies of water have pronounced effects on the climate of local areas. The geographical position of the State and the usual course of air masses governed by the atmospheric circulation of the region provide the general climatic controls.

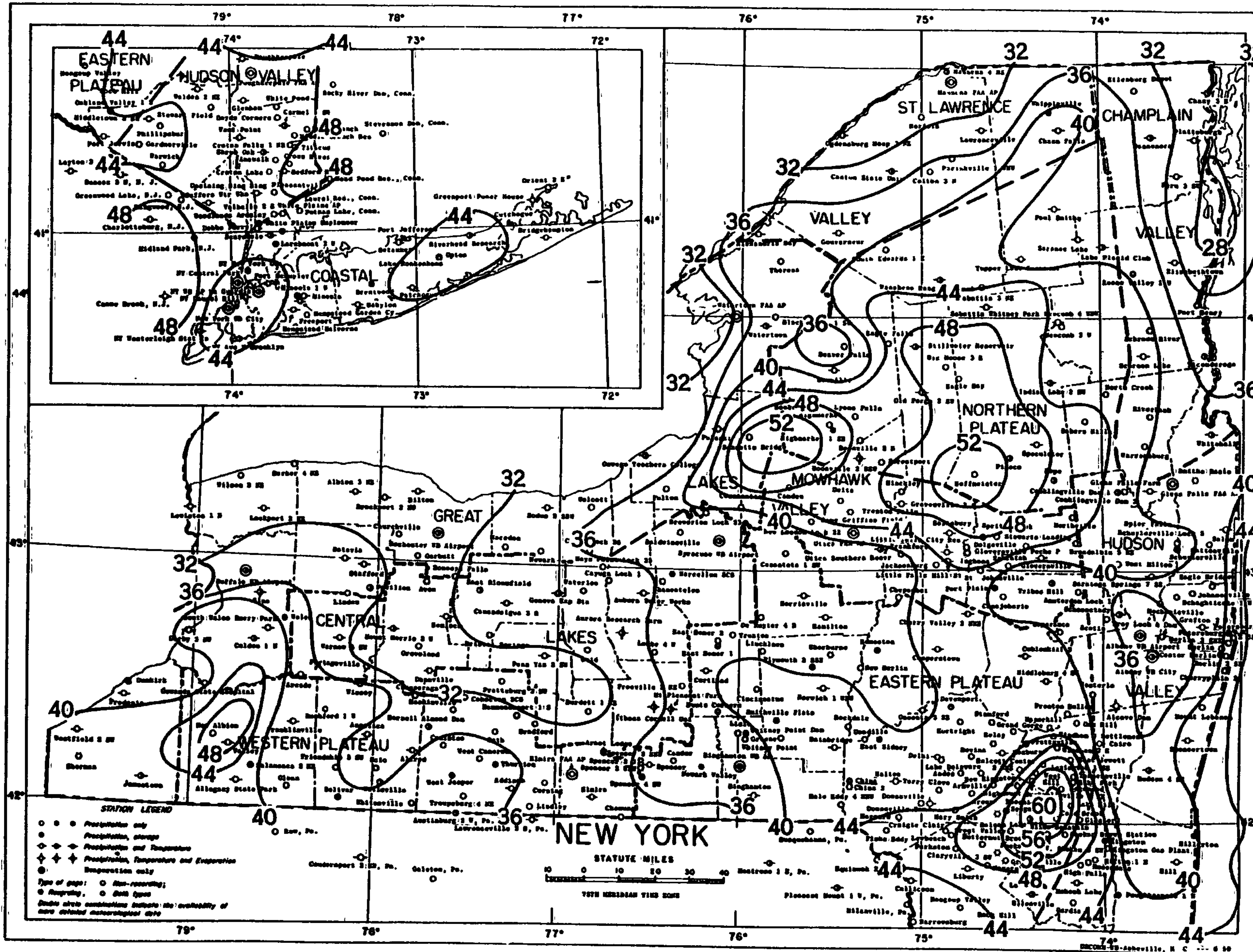
New York State contains 49,576 square miles exclusive of the boundary water areas of Long Island Sound, New York Harbor, Lake Ontario, and Lake Erie. The major portion of its area lies approximately between latitudes 42°N. and 45°N.; longitudes 73°30'W. and 79°45'W. However, in the extreme southeast a triangular portion extends southward to latitude 41°N., while Long Island lies eastward between latitudes 41°00'N. and 40°35'N. and longitudes 72°W. and 74°W.

The principal highlands of the State may be divided into two general regions, namely, the Adirondack section in the northeast and the Appalachian plateau in the southern portion west of the Hudson Valley. A subdivision of the Appalachian highlands is produced by the deep channel of Seneca Lake, extending from the plains bordering Lake Ontario southward to the Susquehanna Valley. Thus are formed the areas commonly called the Eastern and Western Plateaus; the former extending from the central lakes to the Hudson Valley and the latter westward from the central lakes to the depression of Lake Erie. The Eastern Plateau includes the Catskill Mountains, which are the northeastern New York terminus of the Allegheny Range of the Appalachian Mountain system. In southeastern New York is a minor highland region cut through by the Hudson River. This includes the Highlands, the Palisades, and the Taconic Mountains. Another minor highland known as Tug Hill lies just west of the Adirondacks and the Black River, and includes a large part of Lewis County.

Along the eastern border of the State is a long, narrow lowland, which is occupied by Lake Champlain, Lake George, and the middle and lower portions of the Hudson Valley. The St. Lawrence River, Lake Ontario, and Lake Erie lie in another lowland region on the north and western boundaries. This region is widest south of the eastern end of Lake Ontario, narrowing to a width of only 4 or 5 miles in the western end of the State. Connecting the Hudson-Champlain Valley with the lake plains is a third lowland. This is a deep transversal cut which forms the valley of the Mohawk River and Lake Oneida, and thus divides the main plateau area into the distinct masses of the Appalachian and Adirondack systems. A fourth lowland region is Long Island which is a part of the Atlantic

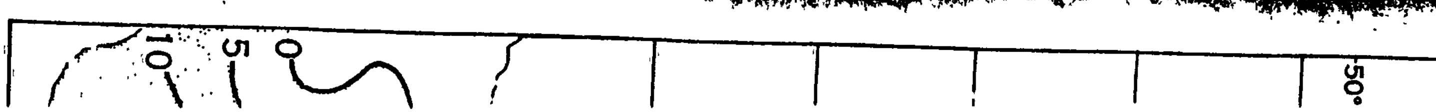
For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. - Price 15 cents

Mean Annual Precipitation, Inches



Based on period 1931-55

Isolines are drawn through points of approximately equal value. Caution should be used in interpolating on these maps, particulary in mountainous areas.



REF. 28

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE
INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2a REGION: 6 SITE CODE: ______

NAME OF SITE : New York Emulsions Tar Products
STREET ADDRESS: Washington Street
TOWN/CITY: Utica
COUNTY: Oneida
ZIP: 13501

SITE TYPE:
Open Dump-__ Structure-X Lagoon-__ Landfill-__ Treatment Pond-__
ESTIMATED SIZE: 3.5 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Suit-Kote Corp
CURRENT OWNER ADDRESS.: Washington St., Utica
OWNER(S) DURING USE...: Same
OPERATOR DURING USE...: Same
OPERATOR ADDRESS......: Same
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From ______ To ___

SITE DESCRIPTION:

This is a distribution center for tar emulsions. The site consists of numerous tanks and associated piping. A remedial investigation completed by Niagara Mohawk Power Corp. indicates that this site may be a source of naphthalene and benzene contamination in the groundwater. This facility is no longer operating.

HAZARDOUS WASTE DISPOSED: Confirmed-___ Suspected-__

TYPE	QUANTITY (units)
naphthalene benzene	unknown

(28)

SITE CODE:________

ANALYTICAL DATA AVAILABLE:

Air-__Surface Water-__Groundwater-X Soil-__Sediment-__None-__

CONTRAVENTION OF STANDARDS:

Groundwater-X Drinking Water-__Surface Water-__Air-__

LEGAL ACTION:

TYPE:State-X Federal-__
STATUS:In Progress-X Completed-__

REMEDIAL ACTION:

Proposed-X Under Design-__In Progress-__Completed-__
NATURE OF ACTION:____________________________________

GEOTECHNICAL INFORMATION:
SOIL TYPE: Fluvial deposits, glaciolacustrine deposits and glacial till.
GROUNDWATER DEPTH: 1-9 ft

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

- groundwater contamination
-
-
-
-

ASSESSMENT OF HEALTH PROBLEMS:

-
-
-
-
-

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NAME: Darrell Sweredoski
TITLE: Senior Sanitary Eng.

NAME:
TITLE:

DATE: Nov. 21, 1986

NEW YORK STATE DEPARTMENT OF HEALTH

NAME:
TITLE:

NAME:
TITLE:

DATE:

DRAFT

SUBJECT TO REVISION
NOT FOR EXTERNAL RELEASE

(28)

New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION SUMMARY REPORT

New York Emulsions Tar Products
Site Name

DEC Site ID Number
(Registry Sites Only)

Washington Street, Utica, Oneida Co.
Address/County

Date of Visit

SITE DESCRIPTION

distribution center for tar emulsions; groundwater in vicinity of the site contaminated with benzene and naphthalene

RECOMMENDED ACTION

Phase I & II

PRIORITY FOR FURTHER ACTION

High ___ Medium X Low ___

ADD TO REGISTRY

X Yes ___ No 2a Suggested Classification

JUSTIFICATION (yes or no)

RI completed by Niagara Mohawk Power Corp. indicates groundwater contaminates may be originating from this site

Prepared by: Darrell Sweredoski of DEC

Date: Nov 21, 1986

28

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Preliminary Assessment

28

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE: XXXXX | 02 SITE NUMBER:

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): New York Emulsions Tar Products

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Washington Street

03 CITY: Utica

04 STATE: N.Y. | 05 ZIP CODE: 13501 | 06 COUNTY: Oneida | 07 COUNTY CODE: | 08 CONG DIST:

09 COORDINATES: LATITUDE 43 06 35. | LONGITUDE 75 13 35.

10 DIRECTIONS TO SITE (Starting from nearest public road): west of North Genesee St, next to Utica Harbor

III. RESPONSIBLE PARTIES

01 OWNER (If known): Suit-Kote Corp.

02 STREET (Business, mailing, residential): Washington St.

03 CITY: Utica

04 STATE: N.Y. | 05 ZIP CODE: 13501 | 06 TELEPHONE NUMBER: ( )

07 OPERATOR (If known and different from owner):

08 STREET (Business, mailing, residential):

09 CITY:

10 STATE: | 11 ZIP CODE: | 12 TELEPHONE NUMBER: ( )

13 TYPE OF OWNERSHIP (Check one)

- ☒ A. PRIVATE
- ☐ B. FEDERAL: (Agency name)
- ☐ C. STATE
- ☐ D. COUNTY
- ☐ E. MUNICIPAL
- ☐ F. OTHER: (Specify)
- ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

- ☐ YES DATE: / / (MONTH DAY YEAR)
- ☐ NO

BY (Check all that apply)

- ☐ A. EPA
- ☐ B. EPA CONTRACTOR
- ☐ C. STATE
- ☐ D. OTHER CONTRACTOR
- ☐ E. LOCAL HEALTH OFFICIAL
- ☐ F. OTHER: (Specify)

CONTRACTOR NAME(S):

02 SITE STATUS (Check one)

- ☐ A. ACTIVE
- ☒ B. INACTIVE
- ☐ C. UNKNOWN

03 YEARS OF OPERATION: BEGINNING YEAR | ENDING YEAR — ☒ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

benzene and naphthalene

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

- ☐ A. HIGH (Inspection required promptly)
- ☒ B. MEDIUM (Inspection required)
- ☐ C. LOW (Inspect on time available basis)
- ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT: Darrell Sweredoski | 02 OF (Agency/Organization): NYS DEC, Watertown | 03 TELEPHONE NUMBER: (315) 785-2522

04 PERSON RESPONSIBLE FOR ASSESSMENT: same | 05 AGENCY: | 06 ORGANIZATION: | 07 TELEPHONE NUMBER: ( ) | 08 DATE: / / (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
XXXX	

II WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- A SOLID
- B POWDER FINES
- C SLUDGE
- D OTHER ______ (Specify)
- E SLURRY
- F LIQUID
- G GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS ______

CUBIC YARDS ______

NO OF DRUMS ______

03 WASTE CHARACTERISTICS (Check all that apply)

- A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- D PERSISTENT
- E SOLUBLE
- F INFECTIOUS
- G FLAMMABLE
- H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- K REACTIVE
- L INCOMPATIBLE
- M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	—	—	benzene & nephthalene
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

[redacted]

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
XXXX	

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A GROUNDWATER CONTAMINATION — 02 [X] OBSERVED (DATE ______) ☐ POTENTIAL [X] ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

benzene and naphthalene documented

01 [X] B SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

strong potential for surface water contamination via storm sewer in area

01 [X] C CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

some potential exists

01 ☐ D FIRE EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

not likely

01 ☐ E DIRECT CONTACT — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

not likely on site

01 [X] F CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED ______ (Acres) 04 NARRATIVE DESCRIPTION

strong potential exists

01 ☐ G DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

potable water supplies unknown

01 ☐ H WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

not likely

01 ☐ I POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

potential for exposure in surface waters (Mohawk River)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: XXXX | 02 SITE NUMBER:

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

unknown

01 ☐ K DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (include name(s) of species)

unknown

01 ☐ L CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

unknown

01 ☒ M UNSTABLE CONTAINMENT OF WASTES (Spills runoff standing liquids leaking drums) — 02 ☐ OBSERVED (DATE ______) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ______ 04 NARRATIVE DESCRIPTION

high potential for contaminate migration

01 ☐ N DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

unknown

01 ☒ O CONTAMINATION OF SEWERS STORM DRAINS WWTPs — 02 ☐ OBSERVED (DATE ______) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

high potential due to infiltration of groundwater

01 ☐ P ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE ______) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: ______

IV. COMMENTS

Niagara Mohawk Power Corp. has completed an RI in the area which indicates that this site may be a source of groundwater contamination

V. SOURCES OF INFORMATION (Cite specific references e.g. state files, sample analysis, reports)

Niagara Mohawk RI March 1985
Harbor Point Property

28

New York Emulsions Tar Products
Div Suit-Kote Corp
Washington St., Utica

Main Office - Cortland - Suit-Kote Corp.

Harter, Secrest, & Emery Attorneys at Law
700 Midtown Tower, Rochester
R. Clinton Emery

REF. 29

15 (12-75)

New York State Department of Environmental Conservation

MEMORANDUM

TO: Walt Demick
FROM: Darrell Sweredoski, Region 6
SUBJECT: NEW YORK EMULSIONS TAR PRODUCTS, UTICA - #633031

DATE: July 14, 1987

On this date I was contacted by Mr. Mark Kepple from Environmental Oils. Mr. Kepple stated that he was representing a client involved with the above site. He was not at liberty to divulge the client's name.

Mr. Kepple asked me about the status of the New York Emulsion site. I explained to him that it was not currently on the registry, but I expected it to appear in the July registry. I also informed him that the site was scheduled for a Phase I investigation.

I went on to describe to Mr. Kepple our concerns about the site. The Ni-Mo Power Corporation had done a remedial investigation on adjacent property and concluded that groundwater contamination in the form of naphthalene and benzene were eminating from the New York Emulsions site. I also informed him that since monitoring wells were not actually placed on the New York Emulsion site, that the site was only listed as a 2A suspect site.

Mr. Kepple suggested that his client would be interested in a meeting to discuss the issues. I told him that any such meetings would involve our Central Office technical staff and possibly our legal staff. Mr. Kepple said he would discuss the situation with his client and get back in touch with us.

Darrell Sweredoski

Darrell M. Sweredoski, P.E.
Sr. Sanitary Engineer
Division Solid/Hazardous Waste

DMS:kw

REF (30)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2   REGION: 6   SITE CODE: 633021
EPA ID: NYD980664411

NAME OF SITE : Niagara Mohawk Harbor Pt. Property
STREET ADDRESS: Washington Street

TOWN/CITY:	COUNTY:	ZIP:
Utica	Oneida	13502

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: 64 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Niagara Mohawk Power Corp.
CURRENT OWNER ADDRESS.: 300 Erie Blvd. West, Syracuse, NY
OWNER(S) DURING USE...: Utica Gas & Electric
OPERATOR DURING USE...: Niagara Mohawk Power Corp.
OPERATOR ADDRESS......: 300 Erie Blvd. West, Syracuse, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1902 To 1950's

SITE DESCRIPTION:
Site of former Water Gas and Coal Gasification Plants operated by Utica Gas and Electric. Gas was passed through purifier boxes containing wood shavings and iron oxides to remove cyanides. Mixture from purifier box and ash spread over various areas of site. Spillage from product storage areas and coke plant operation.Neighboring operations include an Asphalt Emulsions Plant and Chemical Company. Coal tars spilled on site. Two additional tank farms nearby. A portion of an old municipal landfill is located on this site. DEE is planning to begin negotiations for an RI/FS in June of 1989.

HAZARDOUS WASTE DISPOSED: Confirmed-X Suspected-

TYPE	QUANTITY (units)
cyanides (spent mixture)	24,800 cu yds.
coal tars	60,000 cu yds.
tar and oil	15,200 cu yds.

SITE CODE: 633021

ANALYTICAL DATA AVAILABLE:
Air- Surface Water-X Groundwater-X Soil-X Sediment-X

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: Consent Order State- X Federal-
STATUS: Negotiation in Progress- X Order Signed-

REMEDIAL ACTION:

Proposed-X Under design- In Progress- Completed-
NATURE OF ACTION: RI-FS

GEOTECHNICAL INFORMATION:
SOIL TYPE: waste fill, clays, sand gravel, silty sands & clays
GROUNDWATER DEPTH: 2-10 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Niagara Mohawk has completed initial studies of land and Mohawk River. Releases of cyanide, benzene and polynuclear aromatics to shallow groundwaters and Mohawk River confirmed. Deep aquifer studies on-going. Heavy soil contamination on site.
Site was fenced 11/84 by Niagara Mohawk.

ASSESSMENT OF HEALTH PROBLEMS:

Direct contact concerns caused by heavy onsite soil contamination have been addressed by the erection of a fence at DOH request (11/84). Therefore, no exposure to soil is likely, unless movement or use of contaminated soil occurs. This may be a consideration if plans to develop the area for commercial/recreational purposes proceed. Shallow groundwater contamination and potential deep aquifer contamination discharge to the Mohawk River, posing potential recreational hazards. The area is on public water. However, DOH will reinspect the area in summer, 1989 to reconfirm that no private wells in the area continue to be used for drinking water, unless they are sampled.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2a   REGION: 6   SITE CODE: 633030
EPA ID:

NAME OF SITE : Monarch Chemical Company Inc.
STREET ADDRESS: 37 Meadow Street

TOWN/CITY:	COUNTY:	ZIP:
Utica	Oneida	13503

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: 6 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Monarch Chemical Co.Inc.
CURRENT OWNER ADDRESS.: 37 Meadow St., Utica, NY
OWNER(S) DURING USE...: Same as above
OPERATOR DURING USE...: Monarch Chemical Company, Inc.
OPERATOR ADDRESS......: 37 Meadow Street, Utica, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1966 To present

SITE DESCRIPTION:
Chemical distribution/manufacturing plant of sodium hydroxide and sodium hypochlorite. The plant uses various acids in their production process. They also receive and distribute other assorted chemicals. Site is located in an industrial area adjacent to the Mohawk River and Utica Harbor. Groundwater analysis show contamination from dichloroethanes, trichloroethanes and dichloroethylenes. A Phase I study is currently underway, and a Phase II study is planned.

HAZARDOUS WASTE DISPOSED: Confirmed-X Suspected-

TYPE	QUANTITY (units)
dichloroethanes	unknown
dichloroethylenes	
trichloroethane	

SITE CODE: 633030

ANALYTICAL DATA AVAILABLE:
Air- Surface Water- Groundwater-X Soil- Sediment-

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: Negotiation in Progress- Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-
NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE:
GROUNDWATER DEPTH: 5 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Groundwater beneath the site is contaminated with various solvents.

ASSESSMENT OF HEALTH PROBLEMS:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2a REGION: 6 SITE CODE: 633032
EPA ID: NYD986866010

NAME OF SITE : Mohawk Valley Oil Inc.
STREET ADDRESS: Washington Street

TOWN/CITY:	COUNTY:	ZIP:
Utica	Oneida	13501

SITE TYPE: Open Dump- Structure-X Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: 3.5 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: ** Multi - Owner Site **
CURRENT OWNER ADDRESS.: * * * * *
OWNER(S) DURING USE...: Mohawk Valley Oil Inc.
OPERATOR DURING USE...: Mohawk Valley Oil Co.
OPERATOR ADDRESS......: Route 49, Marcy, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From To

SITE DESCRIPTION:
This was a tank storage area used to store fuel. There are 2 separate sections of land the comprises this site. The active portion of the property is the Mohawk Valley Oil Terminal. The other section is the former Niagara Flats Terminal which was originally owned by the Niagara-Mohawk Power Co. This property was purchased by the Mohawk Valley Oil Co. in 1961 and sold to the Interstate Harbor Development in September of 1987.
A remedial investigation completed by NI-MO Power Co. indicates that this site may be the source of napthalene and benzene contamination in the groundwater. The Mohawk Valley oil terminal tanks have been removed and the Niagara Flats property has been filled in with construction and demolition material. A Phase I study is underway and a Phase II is planned for 1989.

HAZARDOUS WASTE DISPOSED: Confirmed- Suspected-X

TYPE	QUANTITY (units)
Benzene	Unknown
Napthalene	

SITE CODE: 633032

ANALYTICAL DATA AVAILABLE:
Air-   Surface Water-   Groundwater-X Soil-   Sediment-

CONTRAVENTION OF STANDARDS:
Groundwater-X   Drinking Water-   Surface Water-   Air-

LEGAL ACTION:

TYPE..:   State-   Federal-
STATUS: Negotiation in Progress-   Order Signed-

REMEDIAL ACTION:

Proposed-   Under design-   In Progress-   Completed-
NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE: Glacial Lacustrine deposits and Glacial Till
GROUNDWATER DEPTH: 1-9 Feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Contamination of groundwater

ASSESSMENT OF HEALTH PROBLEMS:

6.2 APPENDIX B - REVISED NYSDEC INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

(47-15-11 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF SOLID AND HAZARDOUS WASTE

INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

PRIORITY CODE: ______________ SITE CODE: 633031

NAME OF SITE: New York Emulsion Tar Products REGION: 6

STREET ADDRESS: Washington Street

TOWN/CITY: Utica COUNTY: Oneida

NAME OF CURRENT OWNER OF SITE: Suit Kote Coporation

ADDRESS OF CURRENT OWNER OF SITE: 1911 Lorings Crossing Road
Cortland, New York 13045

TYPE OF SITE: OPEN DUMP ☐ STRUCTURE ☐ LAGOON ☐
Factory LANDFILL ☐ TREATMENT POND ☐

ESTIMATED SIZE: 2.96 ACRES

SITE DESCRIPTION:

Originally site of manufacture and distribution of road tar and related products, later of asphalt emulsion. Several buildings and storage tanks on 2.96 acres in industrialized area of Utica, New York.
Subsurface investigations on neighboring property point to site as source of naphthalene and benzene in groundwater. Other contaminants may also have come from here. Further investigations required on site itself.

Phase I investigation completed November, 1987.

HAZARDOUS WASTE DISPOSED: CONFIRMED ☐ SUSPECTED ☒

TYPE AND QUANTITY OF HAZARDOUS WASTES DISPOSED:

TYPE	QUANTITY (POUNDS, DRUMS, TONS, GALLONS)
coal tar products	unknown

TIME PERIOD SITE WAS USED FOR HAZARDOUS WASTE DISPOSAL:

__________, 19 26 TO approx. , 19 83

OWNER(S) DURING PERIOD OF USE: Koppers Products Co.; Suit-Kote Corp.

SITE OPERATOR DURING PERIOD OF USE: same as above

ADDRESS OF SITE OPERATOR: Suit-Kote: 1911 Lorings Crossing Road, Cortland, N.Y. 13045

ANALYTICAL DATA AVAILABLE: AIR [ ] SURFACE WATER [X] GROUNDWATER [X]
SOIL [X] SEDIMENT [X] NONE [ ]

CONTRAVENTION OF STANDARDS: GROUNDWATER [X] DRINKING WATER [ ]
SURFACE WATER [ ] AIR [ ]

SOIL TYPE: Unconsolidated fill, silt, clay

DEPTH TO GROUNDWATER TABLE: 10-15 ft.

LEGAL ACTION: TYPE: ________ STATE [ ] FEDERAL [ ]
STATUS: IN PROGRESS [ ] COMPLETED [ ]

REMEDIAL ACTION: PROPOSED [ ] UNDER DESIGN [ ]
IN PROGRESS [ ] COMPLETED [ ]

NATURE OF ACTION: ________

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Subsurface investigations by Niagara Mohawk, owner of adjacent property, indicates naphthalene and benzene contamination of groundwater from this site. Other contaminants possible. Mohawk River sediments may be affected. Water column appears to be unaffected.

ASSESSMENT OF HEALTH PROBLEMS:

Some risk of direct contact. Fairly low risk by groundwater or surface water route. 120 potable water wells known within three mile radius. Surface water intakes 15 miles away.

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	NEW YORK STATE DEPARTMENT OF HEALTH
NAME Kevin H. Siepel	NAME
TITLE Scientist-URS Corp.	TITLE
NAME	NAME
TITLE	TITLE
DATE: November 11, 1987	DATE:

PAGE